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SOME FUNDAMENTAL VERITIES IN EDUCATION

EDMUND W. E. GROSSMANN

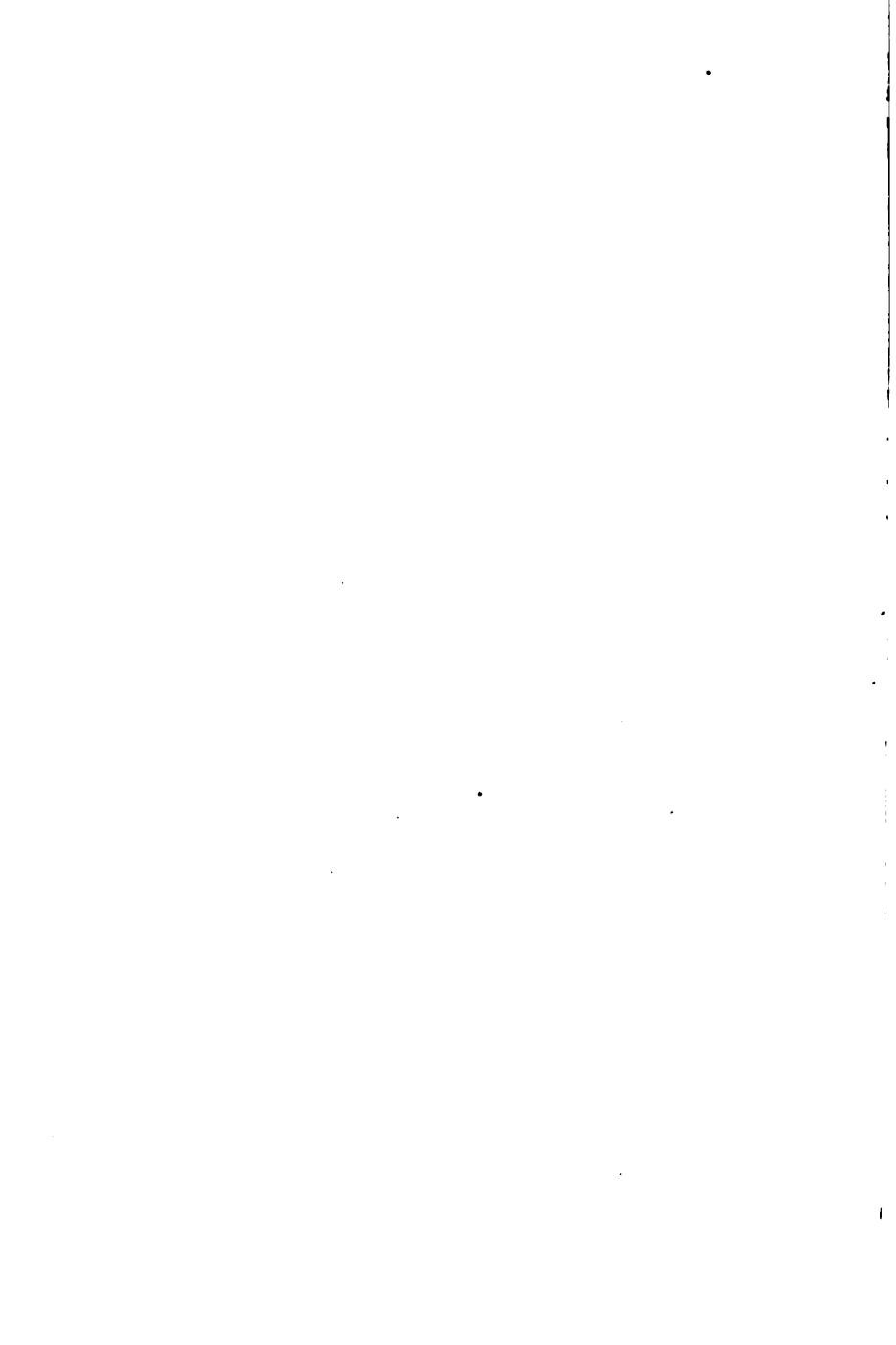
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Some Fundamental Verities in Education

BY

MAXIMILIAN P. E. GROSZMANN, Pd. D.

Author of "The Career of the Child"

With a Symposium Preface by Frederick E. Bolton,
W. Grant Chambers, A. B. Poland, H. H. Horne

ILLUSTRATED



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SYMPOSIUM INTRODUCTION

I

FREDERICK E. BOLTON....Page III

II

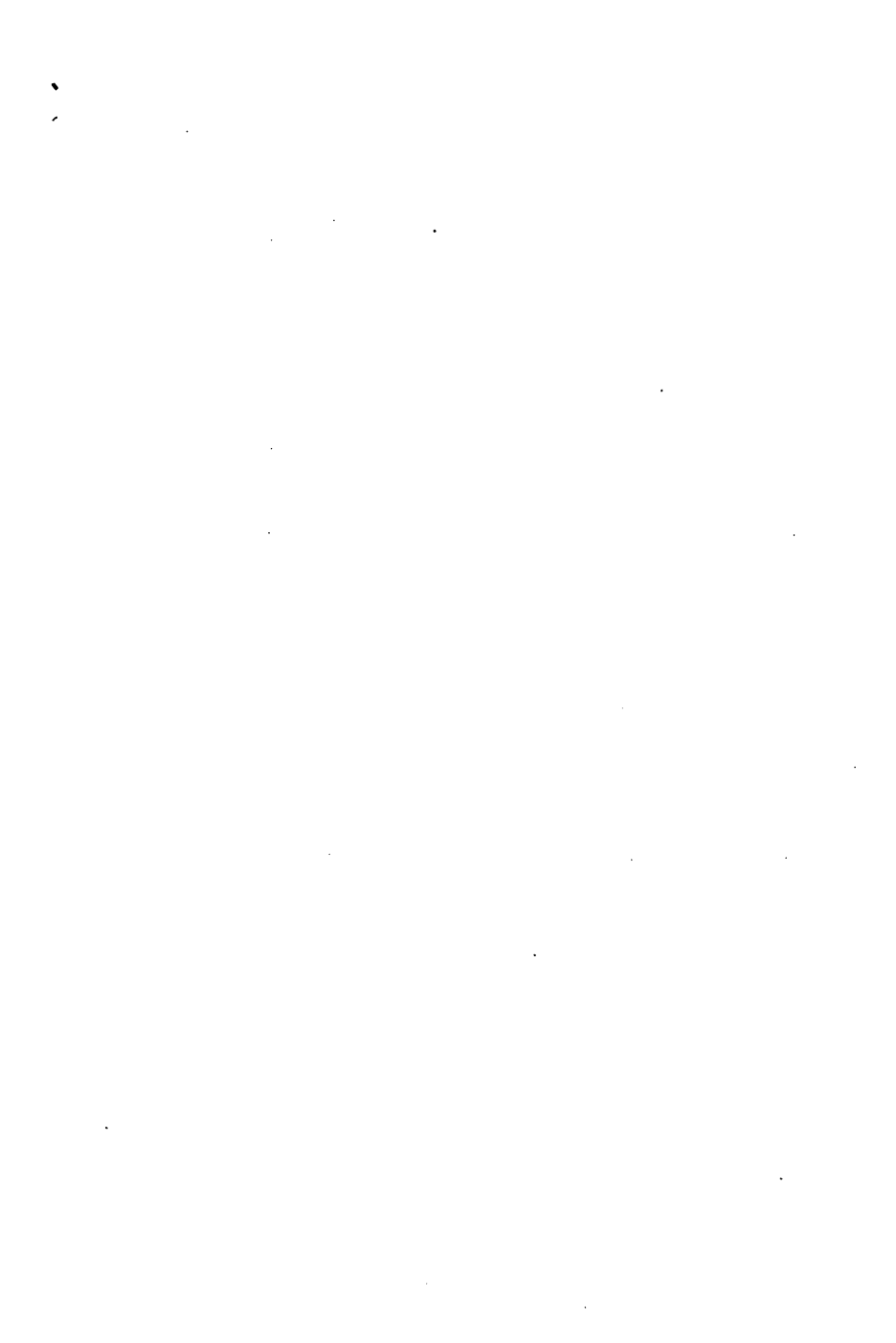
W. G. CHAMBERS.....Page VII

III

A. B. POLAND.....Page X

IV

H. H. HORNE.....Page XV



INTRODUCTION

I

The principles enunciated by Dr. Groszmann in this booklet were daring prophecies a score of years ago. When the author first wrought out and tested experimentally the ideas therein expressed there were many, as the present writer well remembers, who considered such doctrines as "fads." But Dr. Groszmann and others saw clearly, tested courageously, and demonstrated beyond cavil that the "new fangled notions" and "fads" were indeed fundamental verities in educational procedure.

No one has demonstrated more thoroughly than Dr. Groszmann that the processes of education can not be wisely administered by those who possess only knowledge of the subject matter and "common sense." Education is a science as well as an art and the educator must have scientific knowledge of the growth and unfoldment of the powers of the being to be educated.

The great topic of the day is "conservation," but only the prophetic yet understand that the supreme problem of conservation is

INTRODUCTION

the conservation of human mentality. This must be accomplished by prevision in detecting the moments of germination of the unfolding possibilities of the awakening being. Dr. Groszmann long ago foresaw that education is a problem in psychogenetic science. The various examples which he has used to illustrate his principles, especially those drawn from the realms of motor activities and artistic impulses, all show the fact of nascent periods in development. Unmindful, however, of these inexorable laws of growth, many a course of study ignores the true order of development and prescribes abstract studies at a time when motor activities predominate and place the simple, concrete and motor activities at a time when the mind should have become capable of sustained abstract thinking. How long shall we be obliged to witness the spectacle of boys and girls prattling the dry forms of abstract grammar and arithmetic at a time when they would so delight in making things, drawing, and painting, learning the elements of science, becoming masters in speaking foreign languages, etc.? Later, in college, about half of their time is occupied with learning details which could have been more

INTRODUCTION

easily and certainly mastered a decade before. A recognition of the fundamental verities in education suggested by the author would make impossible such atrocities committed in the name of education.

No truth is expressed better by the author than the important idea that education is not a process of filling minds, but rather a matter of stimulating to natural expression. Happily we are coming to recognize interest as a means, and expression as an end of all true education. The individual develops only through expression and he is stimulated to expression only by becoming genuinely interested. Interests are also coming to be recognized as direct functions of instincts and stages of development.

As Dr. Groszmann indicates, the ideas expressed in this book are no longer new ideas. Happily, through the heroic and far-sighted work of the author and others who have independent ideas and the courage to advance them, educational practice in the better schools is coming to be well in line with the principles maintained. But even now the general public, the parents of the children to be educated in our schools, have a very vague idea of the significance of these prin-

INTRODUCTION

ciples which are revolutionizing our processes of teaching and education, and which are in strong contrast to the traditional school courses.

It is hoped that this little book, though tardy in appearing, may serve as a guide to many who still seek light and may give courage to many others who understand but who lack the courage of their convictions.

FREDERICK E. BOLTON,
*School of Education,
The State University of Iowa,
Iowa City, Ia.*

II

The time is past when a justification of constructive and artistic activities in education is demanded by leaders in educational thought. However, the frequent outbursts in the public press against the fads and frills of the modern school suggest that the lay mind is not yet at rest in this matter.

Dr. Groszmann's little book, which I have read with much pleasure, and which is, in a sense, an elaboration of certain points presented in his earlier book on "The Career of the Child", presents in simple form, with numerous illustrations, the chief justification for art and industry in education. Dr. Groszmann's long experience both as an administrator in well known schools and as a student of the life of exceptional children, makes his judgment as to the function of activity, construction, and art creation, as these processes affect the normal development of the mind, especially valuable.

Perhaps the most interesting, certainly the most original, feature of the book is the development of the conception of the "culture epochs" in the sphere of art. The author has worked out quite a convincing argu-

INTRODUCTION

ment in two parallel series of illustrations, one set selected from the work of children, the other from survivals of primitive art. This demonstration supplements nicely, on the side of expression, the older form of the theory of "culture epochs" which emphasized chiefly the child's interests. The experiment from which Dr. Groszmann's theory emerged was worked out many years ago in the Ethical Culture Schools, then under his direction.

The complete education in our day includes more than preparation for industrial success—more than conventional knowledge—more than social efficiency. It must include an appreciation of the goodness and beauty in the world in which the individual is to live. Mental sanity depends no less on the processes of construction, representation, and appreciation, than it has long been known to depend on normal perception, judgment, analysis, and all the rest. The suggestion herein developed that these expressive activities develop in an order determined by racial evolution, along with their underlying interests, while not wholly unique, is very cleverly and clearly illustrated. It is no mere figure of speech to

INTRODUCTION

speak of the principles brought out in this little book as "Some Fundamental Verities in Education".

W. G. CHAMBERS,
School of Education,
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III

Progress in elementary school education, during the last twenty-five years in the United States, has been rapid. Aims have broadened, method less often consists in memorizing facts from a text book, and results in general show that the average grammar school graduate of to-day has acquired in school a better knowledge of the 3 R's than did his predecessor of a generation ago. Moreover, the grammar school graduate of to-day has learned in school to do a great many useful things such as drawing, manual training, sewing, cooking and the like. But despite all this there exists, as always heretofore, a widespread dissatisfaction with the results achieved. Investigations such as that recently had in Baltimore and such as that now being conducted in New York City, bear witness to the unrest and dissatisfaction of the public at large.

For twenty-five years or longer there has been developing gradually a public self-consciousness of the insufficiency of former aims in education to meet modern social and industrial needs. With the increasing wealth of the country the disposition to realize new-

INTRODUCTION

er aims has grown *pari passu*, until we now find the public mind altogether unsettled and at times reactionary.

The chief cause alleged for present dissatisfaction with the schools is the congested course of study which by natural implication leads to the conviction that essentials are being neglected; second to this is the rapidly growing cost of school maintenance. To defend the latter by comparison with the increased cost of living is useless; the public might perhaps be satisfied if they were getting what they demand, namely, a more perfect knowledge of, and skill in, the 3 R's. To convince the public that these studies are being taught much better than they were a generation ago before the newer studies had been introduced, seems to be futile. The public will not believe it, for the time given, it is said, is inadequate; moreover, the facts, it is alleged, do not warrant it.

If attention is called to such comparative tests as have been made in Norwich (Conn.), Springfield (Mass.), and Cleveland (Ohio), showing as they do in each instance that better results are being obtained in the 3 R's than formerly, the public is still unconvinced.

Occasionally educators themselves, by

INTRODUCTION

their public confessions, add fuel to the flames of popular dissatisfaction. Thus the National Education Association at its Cleveland meeting, in the year 1908, adopted in its declaration of principles a resolution to the effect that "diversified and overburdened courses of study in the grades" should be subordinated to a "thorough drill in the essential subjects."

It is unfortunate, indeed, that we have no adequate standards by which to measure the products, and hence the progress, of education. True, for some time back, the National Bureau of Education, the Russell Sage Foundation and other independent agencies have attempted, with greater or less success, to determine the relative efficiency of schools and school systems in the cities of the United States. The methods pursued, however, have been solely quantitative. Facts concerning the number of pupils who leave school before completing the prescribed course of study, facts concerning the number of pupils who repeat the work of the several grades, and figures to show the probable additional cost entailed by such repeating, are all quantitative and discover little or nothing of the qualitative, or real,

INTRODUCTION

aspects of education. Information of the latter kind can be ascertained only by an entirely different method, namely, that of examining pupils as to their actual proficiency in the studies taught and in their capacity *to do things*. Until, in fact, such tests have been applied, it will be impossible to show statistically the measure of progress made by the schools, great as we ourselves believe it, and personally know it, to have been. Meanwhile, the broader aims and better methods advocated by Dr. Groszmann have helped the situation immeasurably.

As an illustration of the reactionary tendency, the last session of the Legislature of the State of New Jersey amended its school laws, by enacting a provision requiring a uniform State examination in order to graduate pupils from a grammar school into a high school. The examination extends to the 3 R's only, including geography and history of the United States.

The practical results of such legislation, if allowed to remain on the statute books, can not be other than to set back the wheels of progress a generation at least. It will cause, necessarily, undue emphasis to be laid on the purely *formal*, or examinable, as-

INTRODUCTION

pects of the common school branches; it will cause most teachers to ignore to a very large extent the *real* elements of knowledge in which, rather than the formal, educators of late have been more deeply concerned. The *raison d'être* for such reactionary legislation is to be found in (a) inability to appreciate the fundamental conceptions of what is needed in an industrial democracy, (b) over-appreciation of the utility of an elementary school curriculum in which undue emphasis is placed, as in this case, on the 3 R's. It is the purpose, I take it, of Dr. Groszmann in bringing out this last monograph to combat, so far as possible, this reactionary tendency.

The writer takes pleasure in being able to recall vividly the utterances of Dr. Groszmann made in the early 90's along these lines. These early utterances were regarded by many of the best educators in New York and vicinity, who were fortunate enough to hear them, as doubtless sound in theory but too visionary and remote to be put into immediate practice. Indeed, they looked upon at that date as being an educational experiment of very doubtful value. But times have changed and a better phil-

INTRODUCTION

osophy now prevails. That Dr. Groszmann's views have been so generally accepted among the educators in all parts of the country must be to him a matter of great personal, as well as professional gratification.

I consider "The Career of the Child" and its companion book "Some Fundamental Verities in Education" as valuable and timely contributions. They can not fail to be gratefully received by the public, lay as well as professional, and will be likely to exert a favorable influence upon the reactionary tendencies to which allusion has been made.

A. B. POLAND,
Superintendent of Schools,
Newark, N. J.

IV

A Brief Notice of the History and Philosophy of the Motor Element in Education.

The demand of this book is that the motor element in training be made fundamental, consequently that the sensory element be made secondary. The motor element in general represents the educative influence of action; in this book it is represented by the two activities of manual training and art. The sensory element in general represents the educative influence of thought, especially through the use of books.

Historically the sensory element has been primary in education and the motor element secondary. The Greeks regarded labor as menial, though they excelled in the artistic self-expression which slave labor made possible. The Romans were not above work but they lacked in artistic self-expression. Thus each of the classical nations lacked one of two elements in motor training herein discussed. Among the Greeks the life of thought dominated the life of action; among the Romans the life of action dominated the life of thought, and their schools, which

INTRODUCTION

produced the orators of Rome, reflected this fact.

The mediæval curriculum aimed to discipline mind and body rather than to develop them. Labor was regarded as a necessity, not as an education; it consumed time that otherwise might be misspent in idleness. The sensory element of impression dominated the motor element of expression.

The Renaissance revived the intellectualism of Greece, and the whole modern curriculum until twenty-five years ago has been dominantly a matter of knowledge rather than one of efficiency. Luther demanded handwork to accompany headwork without fully appreciating the educational significance of his demand. Pestalozzi in his long life of educational experimentation began to catch glimmers of the educative value of handwork. Froebel first grasped the full educational significance of occupations and creative self-expression. Though the past twenty-five years have seen the general recognition on the part of leaders of educational thought and of the most advanced school systems of the truths behind the demand for motor training, on the practical side the revolution of the curriculum remains yet to be

INTRODUCTION

effected. This text is another voice calling for the revolution.

On the philosophical side the demand for motor in distinction from sensory training means an emphasis on the will in distinction from the intellect. The conflict between the claims of will and intellect is indicated by the terms voluntarism *versus* intellectualism. To the voluntarist the will is the essential characteristic of man, to the intellectualist man is essentially a thinking, not an active, being. In educational philosophy Herbart made the pendulum swing in the direction of intellectualism, and our modern school methods have mainly followed him.

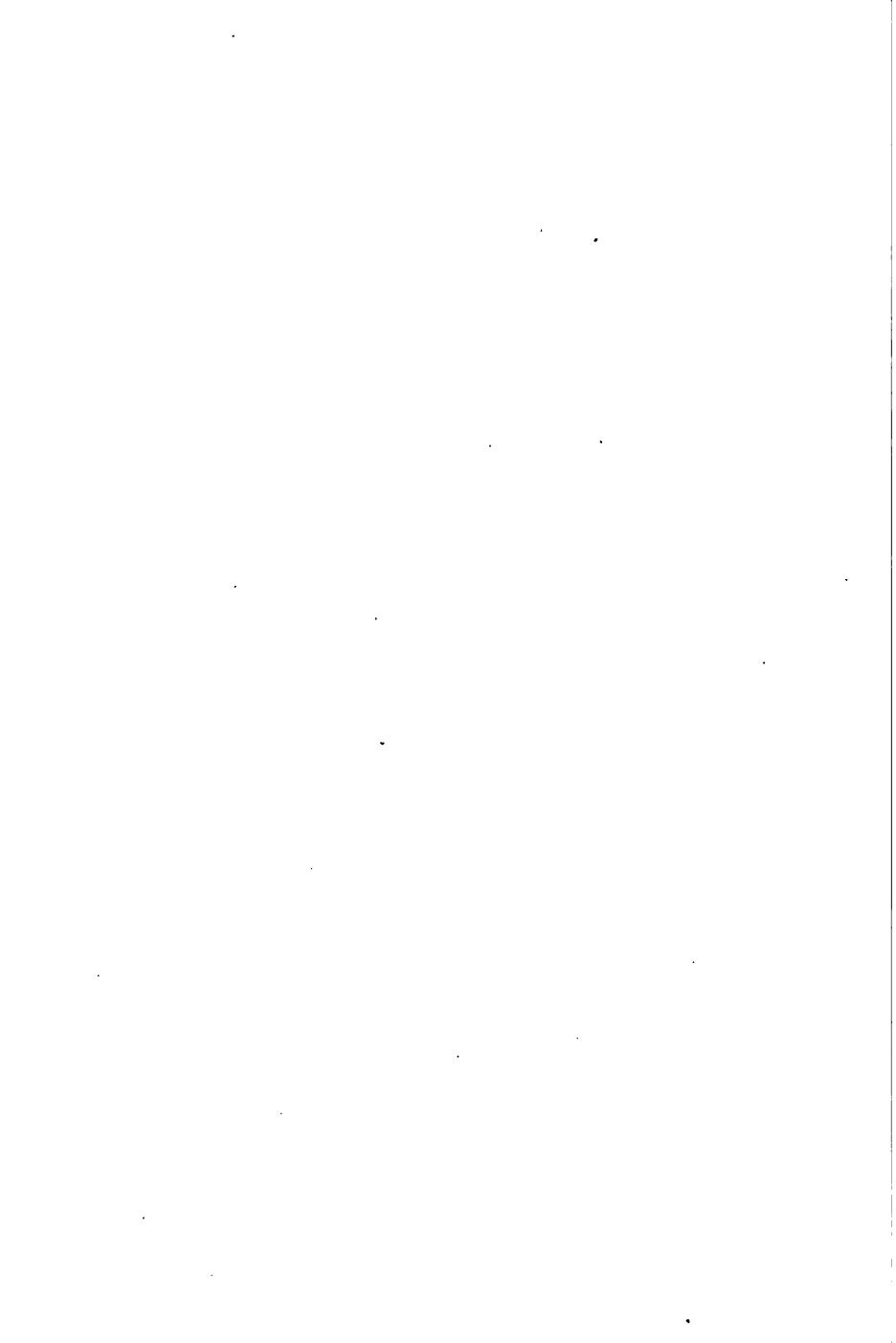
But the rise of the biological sciences in the latter half of the nineteenth century have stressed the deep place of instincts in life, especially in the lives of children. Reason appears to have the practical function of guiding action instead of the intellectual function of pure thought. Schopenhauer has especially represented the primary place of will and the secondary place of intellect. In educational philosophy Froebel again has represented the active side of our natures. The remarkable pragmatic philosophy of our own day is again a variant form of vol-

INTRODUCTION

untarism. The educational philosophy of the next generation is likely to be voluntaristic rather than intellectualistic. And, by implication, it is the voluntaristic philosophy that underlies the demands of this book.

In sum, the history and philosophy of education are ready for the next step forward, viz., the substitution of the motor for the sensory element as fundamental in training.

H. H. HORNE,
School of Pedagogy,
New York University.



FOREWORD

THIS small volume is a companion to my book, "The Career of the Child from the Kindergarten to the High School," which has just appeared. It emphasizes some of the arguments presented there, and endeavors to prove the fundamental value, in education, of the native instincts and tendencies of the child. While laying particular stress upon the manual and creative side of educational method, and thus connecting more particularly with chapters vi (The Manual Principle) and vii (Kinds of Manual Expression) of the other book, the present argument goes to the main springs of child activity and interest, and proposes to base educational science upon a foundation of psychogenetic understanding of the child soul, which in turn must find one of its sources in an appreciation of those phylogenetic facts which are so often overlooked in the discussion of educational problems.

This volume also adds an experimental justification to the theory of developmental periods, or culture epochs, of the child as offered in Chapter v of "The Career of the

FOREWORD

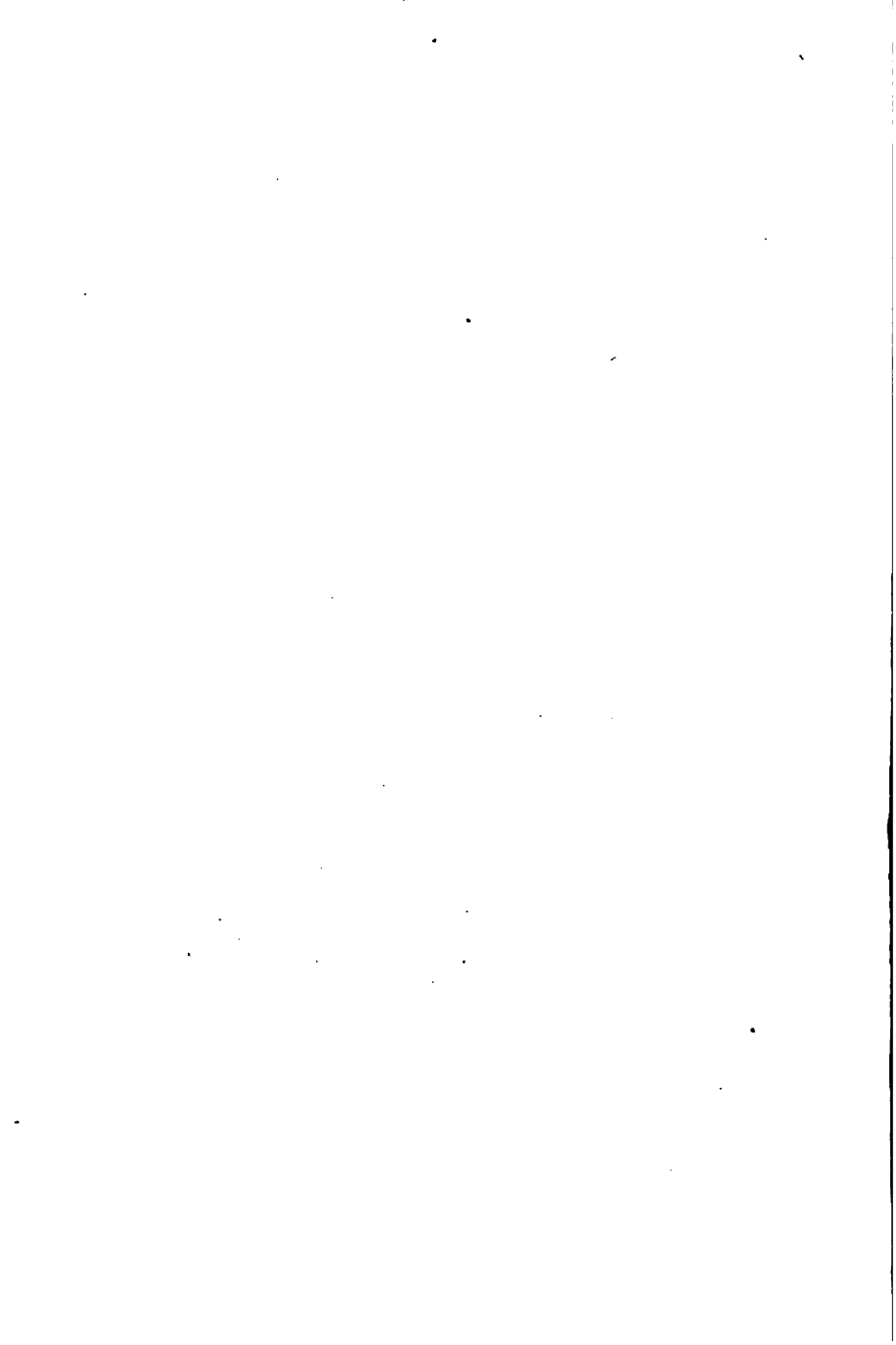
Child" which treats of a rational course of study. The experiments made in the "Ethical Culture School" of New York were later repeated in various forms by the author in other schools of this country, notably the schools of Menomonee, Wisconsin; and everywhere the same conditions were found to be existing, thus further corroborating the theory advanced. As it is easy to make similar tests anywhere, following the same suggestions, anyone may convince himself of the truth or error of my contentions. Experimental work of this kind, in other words the method of the pedagogical laboratory, will elucidate other disputed problems of child development and child psychology, and we may look forward to the time when pedagogy will in reality be an exact science.

The experiments related in this volume were made over a decade and a half ago. And the manuscripts of my book on "The Career of the Child" as well as of the present one were written ten years ago. Some of the chapters have since appeared in the form of articles in various magazines; and all of them were at some time or other made public in the form of lectures. But while the original manuscripts were of course revised before they were presented for publication

FOREWORD

in book form, little or nothing of the original argument appeared to need change, and very little new material had to be added. Altho it is but natural that the educational world has been moving ahead since the idea of these books was first conceived, it will be found that the educational philosophy here expressed is still distinctly modern. This book may at least serve, on the one hand, as a resumé of previous efforts to formulate educational principles; and on the other, as a starting point for further discussions.

MAXIMILIAN P. E. GROSZMANN,
"Watchung Crest",
Plainfield, N. J., October, 1911.



CONTENTS

	PAGE
Introduction	iii
Foreword	5

PART ONE

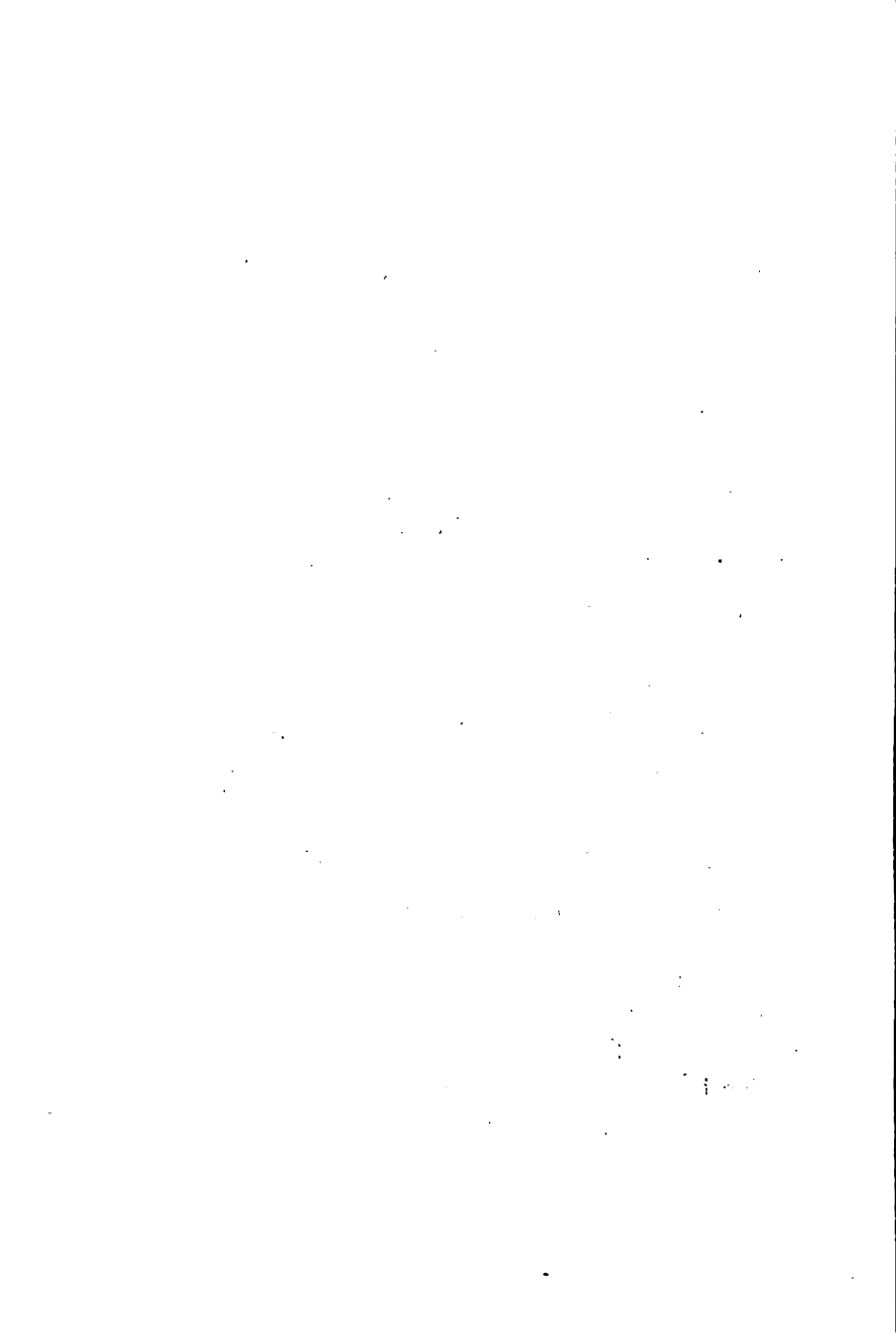
MANUAL CULTURE AND SENSE TRAINING

1—Knowledge Never Learnt of Schools	19
2—Motor and Sense Training	24
3—The Lesson of the Centipede	38
4—Experience vs. Book Learning	42
5—The Philosophy of the Tool	46
6—Not a New Branch, but a Method.	50

PART TWO

ART CULTURE AND ART EXPRESSION

1—The Esthetic Attitude	59
2—Expression Thru Art	62
3—An Experiment, and Conclusions Therefrom	78
4—Interpretation and Symbolism in Art Expression	86
5—Artistic Culture Epochs	93
6—Suggestions as to a Course in Art Training	108
Conclusion	116



ILLUSTRATIONS

FIGURE

- 1 & 2—Moqui Canteen, New Mexico
- 3 & 4—Clay Figures
- 5-7—Clay Figures
- 8 & 9—Free Hand Cuttings, Grade III
- 10—Crayon Drawing, Grade III
- 11-13—Crayon Drawings, Grade IV
- 14-17—Crayon Drawings, Grade IV
- 18—Crayon Drawing, Grade V
- 19—Crayon Drawing, Grade VI
- 20—Crayon Drawing, Grade VII
- 21—Crayon Drawing, Grade VIII
- 22—Egyptian Drawing—A Pond with Palms
- 23—Child's Drawing—A Pond with Trees
- 24—Shaman's Lodge (Alaska)
- 25—Child's Drawing—A Pond with Trees
- 26—Ojibwa Medicine Lodge
- 27—Child's Drawing—A Pond with Trees
- 28—Egyptian Drawing—the Brickmakers
- 29—Egyptian Drawing—the Coffinmakers
- 30—Child's Drawing

ILLUSTRATIONS

FIGURE

31 a & b—Shoemaker and Portrait

31 c—Still Life Drawing

32—Clay Modeling

33-35—Colored Drawings of Indian Vase

36—Priam's Visit to Tent of Achilles

37—A Winter Scene

38—Clay Modeling

SOME FUNDAMENTAL VERITIES IN EDUCATION

THE education of our children, in the schools and in the homes, has in a large measure been dictated by the prevailing fashion of thought. The result has not always been to the satisfaction of those who made it their business to adjust the natural child to these varying fashions. Fashion is no respecter of healthy bodies; it twists and distorts them into artificial shapes, and ruins their health. Thus, educational fashions are apt to distort and destroy a child's natural instincts and produce artificial minds and misfits.

Endeavoring to make the children conform to preconceived ideas as to what they *ought* to be, we have often forever spoiled their best talents. They were hedged in by so many OUGHTS, and trimmed off here and there to make them suit the artificial pattern that their natural growth became seriously interfered with. We insisted that they *ought* to act in certain ways, that they *ought* to feel fine things such as adults thought were right, and noble, and sublime. But we failed to inquire into what the children really *did* think or feel, or whether they were

Some Fundamental Verities in Education

at all capable of feeling, thinking, and acting as we expected them to do.

Unfortunately, it is quite easy to make young children conform outwardly to our rules, accept our standards in a conventional way, and follow blindly our suggestions. But the final outcome is not seldom in the nature of an appalling surprise to parents and teachers. And then there are lamentations and astonishment: Had we not done all we could for the boy who turns out to be wayward? Had we not given him the very best education possible? Probably, we had not. The real nature of the child had remained an unknown quantity to us which we really had not cared to discover. What we had been educating was a shadow—the real self of the child, perchance, we did not touch. While we were trying to mold the child after the best approved pattern, there were underground forces at work which slowly gathered strength, often from the very repression, and finally blew up our artificial structure from within, leaving ruin, and desolation, and wailing.

The new message is: Let us first understand what the child *does* feel, not what he ought to feel; what he *can* do, not what we would like him to do; and then we may ex-

Some Fundamental Verities in Education

pect to be able to make him a man in the service of the highest ideals of the race, one who is first of all *himself*, and true to himself, not a copy of somebody else, not merely an "average" man, after the common fashion: but an individuality, free, strong, aspiring to the noblest.

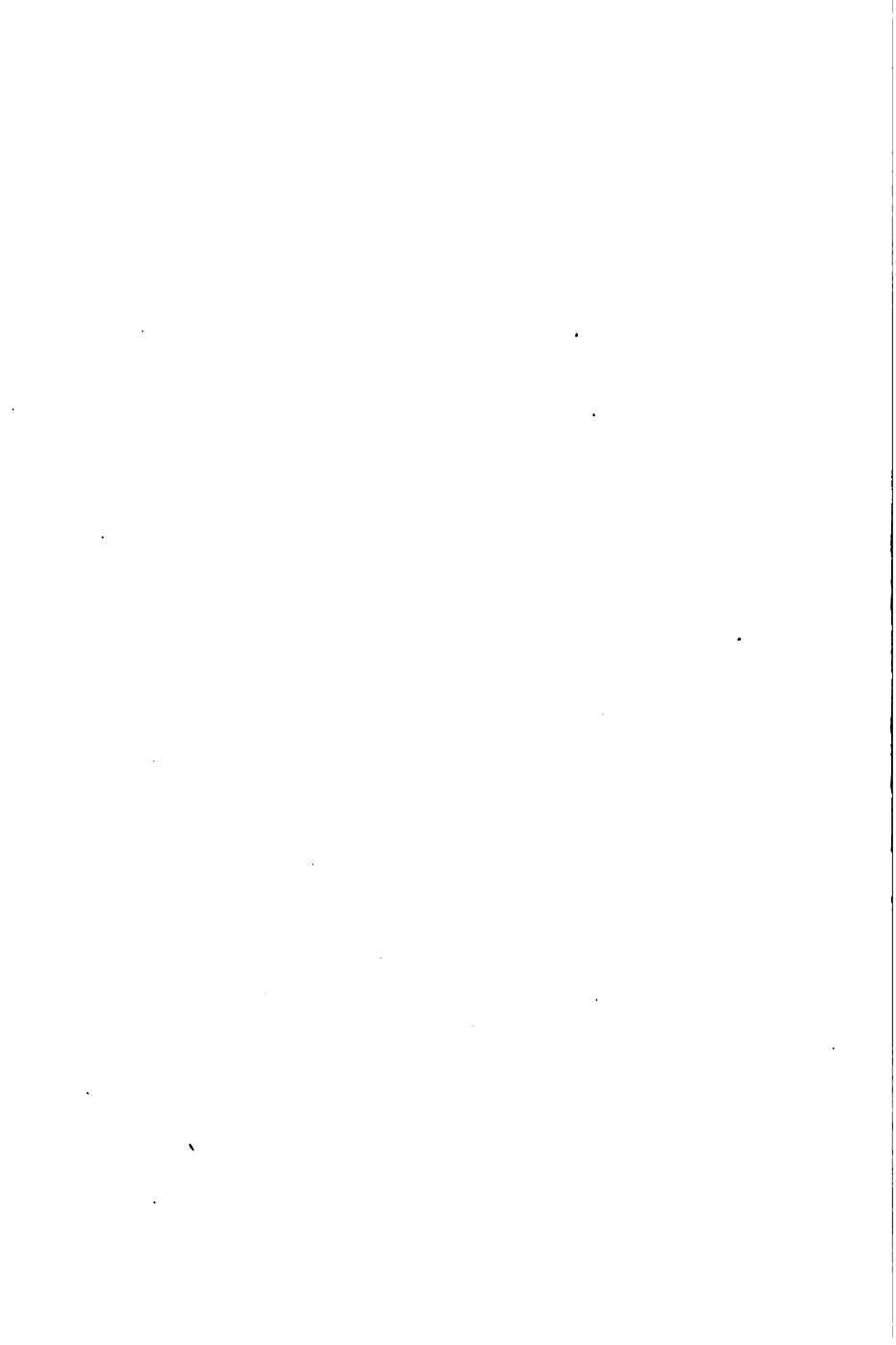
Our traditional education, with all its modern embellishments, is still only too deeply concerned in repressing the natural instincts of children. We force them to give up their paradise of dreams, fancies and play-activities, their glee and noise, and tie them down, at a tender age, to school benches and desks, and slates and books, torturing their immature brains into dullness. We rejoice when our artificial drill succeeds in making them precocious, and imitators of adult ways, not imagining that we have perhaps killed the divine germ of spontaneity and individuality in its very infancy. We praise the quiet, sedate, blasé child who does not disturb the class room discipline as a laudable product of successful education, and wreak vengeance on the sinner who bustles about in unrestrainable boisterousness. And we ignore the fact that health means vigor, noise, activity with a child; that real,

Some Fundamental Verities in Education

wholesome self-control can only come with maturity, and that the quiet child is generally an abnormal child, physically, mentally, or morally.

True, intellectual work, as ordinarily understood, is a form of activity very welcome to most children at certain stages of their growth, and becoming more and more enjoyed by them as their minds mature. But at no stage, during the age of childhood, can it form the exclusive occupation, or the principal, or most normal, form of the children's activity. Even the most studious child, if in the enjoyment of normal health, will get weary of continuous poring over books, of memorizing, writing, and figuring, in school and in the dreary hours of home work which curtails his rest and play; and in certain periods, a fit of aversion to study will take hold of every one. These symptoms of a rather healthy development we are only too apt to denounce as due to moral perversion, laziness, naughtiness, and what not. There would be fewer breakdowns, less of nervous debility and irritable temper, less inefficiency and failure in after-life, if childhood were given its native rights, if the needs of children were better understood.

**PART I. MANUAL CULTURE AND
SENSE TRAINING**



I

Knowledge Never Learnt of Schools

ONE of the foremost characteristics of healthy child life is the play instinct of children. A playing child is a happy child; a child that plays with absorbing interest is normal and in satisfactory condition. Loss of the play interest is a danger signal. What is presented in play form is eagerly taken up and commands supreme interest. The playing child exercises all his powers—never gets tired until physically exhausted; he is inventive, original, wonderful. The playing child lives in a world by himself, glorious, full of beauty, rich in possibilities; nothing is impossible. Thru play mainly is it that the true natural instincts of the child manifest themselves, and a wealth of experience, and the power to do, are acquired.

It is a common experience among principals of schools that parents are very anxious to have their children leave the kindergarten and be advanced to the school classes proper at as early an age as possible so that they might begin to "learn" something. Learn—what? Some figuring on slate and black-board, some drawing of clumsy letters, some

Some Fundamental Verities in Education

so-called reading, stutteringly performed, of brilliant thoughts such as: "I see a cat. The cat can run." Is that learning? True, it leads up towards an avenue of learning which is more or less useful to all, and particularly so to some who are gifted in that direction. But there is a wealth of experience and education to be gathered outside of this narrow path of ordinary school instruction. Indeed, it has been urged, on the ground of a more accurate knowledge of the child's stages of mental and physiological development, that these formal branches should properly be postponed to a later period. The child is learning vastly more than the superannuated believer in the gospel of the three R's has begun to imagine, by using his eyes and ears and hands for a boundless variety of activities other than counting up two and three is five, or reading, "My cat sees a mouse", or awkwardly flourishing a capital C. A sorry child that knows and learns no more than that. As Professor Preyer has said: "A child in the first three or four years of his life learns as much as the student in his entire university course." Well may Whittier's "Barefoot Boy" be quoted

Knowledge Never Learnt of Schools

who gains—

“Knowledge never learnt of schools,
Of the wild bee’s morning chase,
Of the wild flower’s time and place,
Flight of fowl and habitude
Of the tenants of the wood;
How the tortoise bears his shell,
How the woodchuck digs his cell;
And the groundmole sinks his well;
How the robin feeds her young,
How the oriole’s nest is hung;
Where the whitest lilies blow,
Where the freshest berries grow,
Where the groundnut trails its vine,
Where the woodgrape’s clusters shine;
Of the black wasp’s cunning way,—
Mason of his walls of clay,—
And the architectural plans
Of gray hornet artisans!
For, eschewing books and tasks,
Nature answers all he asks;
Hand in hand with her he walks,
Face to face with her he talks,
Part and parcel of her joy,—
Blessings on the barefoot boy!

* * * * *

He learns all this multitude of lessons

Some Fundamental Verities in Education

practically without a teacher, unless it were his father or mother teaching him a community with nature on those precious walks into the open which now-a-days, alas! are becoming a thing of the past,—the bustle and noise of the big cities swallowing up all this sweetness of bygone times. He learns them quite spontaneously and joyously, thru his play, thru his natural activity which develops his muscles, his nerves, his senses, his brain. And he learns them so easily because they are a matter of supreme interest to him, not made a sorry task by a grumbling, critical schoolmaster. To tell the truth, I have little faith in the old Puritanical idea that there is virtue in drudgery, and that we can strengthen our moral nature materially by doing what is distasteful to us. We shall do our best only when our whole soul is in the work; and that can only be when we are supremely interested, when a motive behind the act spurs us on, when we can be ourselves in expression and activity.

Play is the child's work. What is the difference between play and work as the latter is ordinarily conceived? "Compel a boy to continue quietly his game of marbles after an alarm of fire has sounded in his neighbor-

Knowledge Never Learnt of Schools

hood, and play has changed to labor." (Johnson).

It may be claimed, by way of a broad statement, that all that is great in the world has been done not by labor that was drudgery, but by efforts which correspond to the play instinct, that is to say such as were made spontaneously, out of the fulness of the heart, as an outcome of natural instincts, powers, or talents. Man is wholly man, says Schiller, only when he plays.

And what a world of information, inspiration, and training is there thru play! Yoder, in an older study (*Pedagogical Seminary III*) says: "In the making of mud pies and doll dresses, sandpile farms and miniature roads, tiny dams, and water wheels, whittled out boats, sleds, dog harnesses, and a thousand and one other things, the child receives an accumulation of facts, a skill of hands, a true-ness of eye, a power of attention and quickness of perception; and in flying kite, catching trout, in pressing leaves and gathering stones, in collecting stamps, and eggs, and butterflies, a culture also, seldom appreciated by the parent and teacher."

II

Motor and Sense Training

Do not repress the play instinct in the child, but recognize it in his school work! What is called manual training is but one form of this recognition. It means culture thru manual training, thru sense training, thru the play instinct. For true manual culture in the elementary school is directed play, as are the kindergarten occupations and games. Directed:—not in the sense of crushing out the child's spontaneity and inventiveness, but of following Nature's lead by providing for the child, in a more or less systematic and organized way, what he craves for, and what will respond to his innermost needs.

Manual training is in reality sense training. The senses are the gates thru which the knowledge of the world around us comes to us; but the gates only. The mind receives messages from the senses in the *brain*. There it is where impressions take place, where concepts are formed. We do not see with our eyes, but with the brain; we do not feel with our hands, but with our brain. Light, sound, hardness, etc., exist not in reality, but are the forms under which the

Motor and Sense Training

brain perceives the world and its messages. Cut the nerve that connects the eye with the centre of vision in the brain—ever so perfect and unimpaired as the eye may remain, there will be no perception of light. On the other hand, we have learnt very gradually to understand the meaning of the messages which the natural forces are sending constantly thru the senses; learning to locate and interpret the *causes* of sensation, is a laborious task. Thus, sense training is brain training; thru sense training, we are enabled to have clearer and more accurate perceptions and concepts.

The new-born babe has not this knowledge; yet few of us can fully appreciate that the conceptions which constitute the adult's knowledge of the world, and which seem so simple and self-evident, were of such slow growth. A few illustrations may serve to emphasize the character of this conceptual development.

If we move a pencil point along the groove between two fingers so that it touches both at the same time, we are distinctly aware of the presence of only one point, even tho we close our eyes. But not so when we cross the fingers over. If we now touch

Some Fundamental Verities in Education

them with the pencil, we feel two points, and even the assistance of vision which informs us that there is but one, will not dispel the illusion. What is the cause of this peculiar phenomenon? Experience has taught us that one and the same point can touch two adjacent fingers in normal position, but that the two remote sides of these same fingers cannot be reached by less than two points at a time. Crossing the fingers is uncommon because unnecessary for ordinary functions; and consequently there is no experience recorded in the brain of single points touching them in this position. We have learned to *interpret* sensations reported from the adjacent sides of two fingers as coming from one object, and those reported from the remote sides as coming from more than one. This interpretation has become automatic and instantaneous, and can now no longer be corrected by the messages sent from other senses.

Another experiment has been described in various forms by different psychologists. If we lift up with our hands two bodies which are equal in weight, but different in size, the material being apparently the same, the smaller one feels distinctly the heavier. This

Motor and Sense Training

illusion lasts even after we have convinced our intellect, by actual weighing, that the two bodies are equipollent. In an experiment with a series of eight such weights, even persons who were well used to discriminate between small weights, were carried away by the illusion, and gave widely different answers as to the comparative weights of the objects. Some thought they discovered just "a trifling difference"; others estimated the smallest weight to be as much as eight times as heavy as the largest!

The explanation is again that we have become accustomed to an interpretation of the messages which we receive, this time by the muscular sense, as in the first experiment it was the sense of touch, so that it corresponds to our ordinary and oft repeated experience. The larger a body, the heavier it usually is, especially when compared with other bodies made of the same material. Automatically, then, we will expend a greater muscular effort in lifting the larger body than in moving, or weighing, the smaller; experiencing then less resistance from the larger body than we expect, the illusion of its being lighter will be produced. For we measure weight by the resistance a body of-

Some Fundamental Verities in Education

fers to our muscular effort in lifting. The motor response to the sensory impression, as mediated by the sense of sight in this instance, is practically reflex and unescapable. It is noteworthy, however, to remember that the illusion fails in the case of children younger than six, and of imbeciles. Young children lack the association of sensations and ideas which characterizes true conception; the individual senses develop independently of each other, each producing a separate set of impressions which by numberless repetitions under varying conditions become gradually related and co-ordinated. In imbeciles, there is a general weakness of associative power, and their sensations remain essentially unrelated. The illusions here described are impossible without a correlation of sense-experiences; therefore, they are possible only in those who have reached the associative stage.

They are illusions of sensation only, and of what may be called automatic judgment. They can be corrected, as far as abstract knowledge is concerned, by other sense tests. But to make these corrective tests, requires not only an extra effort, but presupposes a consciousness of the possibility of error.

Motor and Sense Training

This consciousness is again the result of experience; it cannot be expected to exist in the young child, or the untrained mind. As we are subject to numberless illusions of similar character, in the entire sphere of sensations, the question may arise whether they might not be avoided, at least in part, by appropriate training in early childhood when our first concepts are being formed.

However that may be, this fact will have become clear from the foregoing discussion that the child learns to interpret the messages it receives thru the senses just as the telegraph operator learns to interpret the meaning of the clicking of his apparatus. And so we have come to call the messages sent thru the ear, sounds; those sent thru the eye, light; those sent thru the sense of touch, hardness or softness, etc.; and then there are messages from the other senses, those of smell and taste, the muscular sense, the temperature sense, and perhaps other senses as yet undefined. As a rule, as said before, it requires the co-operation of several senses to give us the information needed for tolerably clear images of external objects. While these images may after all be but symbols of reality they represent the reactions of

Some Fundamental Verities in Education

our mind to external stimuli, and therefore answer the purpose of cognition.

Indeed, we are constantly at work—and this is what constitutes our mental activity—to correct and clarify our mental images and to increase our conceptional possessions: an activity which renders our world-idea grander, deeper, nobler, hour after hour. But there is a limit to this growth. Not alone that our senses will never suffice to reveal all the mysteries of nature as thru them we can only perceive that fraction of the universal forces which finds them ready channels, or competent messengers;—but the mind has a conventional way of interpreting sense messages in the manner they first impressed it, and which has become fixed and automatic, something like a mere reflex activity. Thus, remembering the finger and pencil experiment, we shall possibly never be able to rid ourselves of the sensation of two pencil points when there is only one. And then, each nerve can convey messages only in its own individual way, that is to say, it can only report a shock which it receives and which is then interpreted by the mind in an habitual, fixed method. Everyone knows about the unpleasant experience of “seeing

Motor and Sense Training

stars" when there are none to be seen, and which happens when we receive a shock on our eye which also affects the optic nerve. The explanation of the sensation is that the irritation of the optic nerve is reported to headquarters and there deciphered in the usual way, as coming from the ordinary source of optic impressions, viz., rays of light. The report could not be deciphered or interpreted in any other way. Thus we have the illusion of light even when the shock was produced by other means, a mechanical pressure, or an electric current, or what not.

All this implies that we are apt to misinterpret messages, to be deceived about the objects our senses perceive, in more than one way. This again suggests that great care must be taken so that the earliest impressions a child receives be as clear and accurate, and mutually supplementary, as the educator's forethought can make them, lest the child carry thru life a veritable burden of erroneous conceptions and modes of interpretation which he can never shake off. The child must learn to test his sensations as mediated by one sense organ constantly by those of the others, in order to arrive at reliable re-

Some Fundamental Verities in Education

sults. His power of observation must be stimulated, so that he will learn to know *exactly*, to think clearly and independently. Here is seen the vast scope of sense training without which all formal instruction in reading, writing, number, in history and geography, in whatever you please, will remain empty and meaningless, mere "sounding brass and tinkling cymbal."

Manual training is sense training. It is training of the hand, as the word signifies, which in itself is a training in muscular adjustment, or motor training; but also of the hand as guided by the eye and inspired and directed by the mind. And were it but a training of the sense of touch, and of the muscular sense, it were much indeed. The sense of touch, assisted by the motor sense, is the most ancient and effective of all. The wonderful accomplishments of children born blind and deaf and mute, when they were placed under careful training,—such as Laura Bridgman and Helen Keller—have been made possible by the sense of touch. Primitive organisms have only this one sense from which all other senses have been differentiated. Even now, touch stimuli have many powerful effects, also in the province of emotional life.

Motor and Sense Training

It is thru tactile and muscular tests, in arm and hand and leg movements, that we have conceptions of space, and of form in space. It was once thought that the eye can at least locate the *direction* from which a ray of light comes as a messenger of knowledge; but it has been shown* that even in this fundamental function the sense of touch must in all probability come to the aid of the mind. The eye perceives nothing but light, or color, or their absence, and degree. Light and color impressions are quite deceptive and often call forth very erroneous notions of an object. The tricks of legerdemain and the effect of panoramas and cycloramas were impossible without this fact. The size and shape of bodies, the distance of objects, the nature and structure of the material composing them, would remain much more a mystery to us than they are, were it not for the tactile and muscular sensations. Unless we have once *handled* a ball, or a cube, we shall never really know what these things mean. The eye mediates to us only two dimensions, on the flat surface. No drawing can give the immediate impression of solid-

*Cf. Am. Journal of Psychology, Oct., 1897, p. 72

Some Fundamental Verities in Education

ity; not even the cleverest painting in color does. True, owing to the convergence of the axes of our two eyes, we look somewhat around an object and thus get a faint indication of solidity; a fact made use of in stereoscopic pictures. But it has also been conclusively proven that the eye can be deceived in spite of this; that it depends upon touch and muscular tests to perfect the idea of three-dimensional space. That we now can recognize, with the eye alone, an object to be solid, is largely due to the fact that we have learnt to interpret certain light and color effects as indicative of certain conditions of size, shape and distance, which were originally revealed to us by handling objects of such size and shape, or by measuring the distances by reaching out for the objects, or walking up to them; and to the further fact that we have forgotten the many sense tests, often made quite unconsciously, thru which we have gathered our experience, slowly, gradually, laboriously, when we were children. Similar associations enable us to appreciate the meaning of paintings in which these same light and color effects are skillfully imitated.

From the first efforts of the crowing babe

Motor and Sense Training

in his crib to discover the nature of the queer shining specks dancing before his eyes, and which he finally learns to locate and recognize, by playing with them, by feeling pain in them, and in numberless other ways, as parts of his own body, his own dear, plump little legs—from these baby experiments to those of the scientist who weighs our globe and measures the distance of stars, there is indeed a long journey, but the process is the same.

The value of sense training, even in infancy, is thus clearly shown. Fröbel recognized this need, and his "Mutter-und Koselieder" have been invented for the very purpose of enabling the mother to assist her babe in the mastering and control of this wealth of sense-impressions rushing at him from all sides. And in the kindergarten practice, the need of sense training is admitted and ministered to, in a more or less thorough manner. But the recognition of this need which is verily paramount, must be continued thruout the school, up to the highest classes.

The intellectual value of motor activity is so high that its repression is fraught with danger in regard to a healthful manifestation of the mind. "Motor centres make up

Some Fundamental Verities in Education

about 1-3 of the brain. . . . By motor training, brain growth and mental activity are increased and new avenues are opened leading to a more intimate acquaintance with the world."* If we remember that the sense of touch, combined with the muscular sense, is the most primitive one from which all others have gradually evolved, it will at once be clear that the touch and motor centers which control this province of sensations, are the very first to develop in the brain, and that they must be helped in their development by use and practice. The other centres, the other portions of the brain develop at later periods. But "if the centre is forced before its time, disorders of muscle and nerve control result" (Hancock, l. c.). Knowing this, we need not be surprised why children whose later and higher brain centres are stimulated artificially and prematurely, are apt to become nervous and abnormal. The percentage of pupils in which nervous disorders are produced by the prevailing irrational methods and standards of education is appallingly high. And let us not deceive ourselves by believing that we gain time by making a

*Hancock, Pedagogical Seminary, Oct., 1894.

Motor and Sense Training

child learn at the earliest possible moment what ought to be postponed to a later period, when his brain is prepared and mature enough for the work. All the seeming brilliancy of his tender age will not prevent him from becoming really weakened and retarded in his growth; he may never really mature. Child prodigies rarely continue to develop after attaining adult age. An English critic has justly accused the ordinary methods by which an artificial stimulation is effected, of producing stupidity rather than intelligence, dullness rather than alertness, degeneration rather than progress.

III

The Lesson of the Centipede

Children of young years are not capable of abstract, logical work; the ability to reason is a late and slow growth. They learn by objective, not by abstract means; by muscular, not by intellectual observation. They absorb more than they abstract; they perceive more than they can reason out; they can do more than they can argue about and tell. Theirs is an instinctive activity, not a reflective. Beware of making the child reflective and self-conscious before his time! His fate may be that of the Centipede of whom the poet sings:

"The Centipede was happy quite,
Until the toad in fun
Said: 'Pray, which leg comes after which?'
Which worked her mind to such a pitch,
She lay distracted in the ditch,
Considering how to run."

As Channing puts it: "The best chance of all is not to be hurried; for the bright ones will learn all the better in late years for prolonged, early physical training, and the defective ones will only tend to develop their inherent weaknesses without it."

The Lesson of the Centipede

This demand does not imply that the children must be left idly to themselves; certainly not. An idle child is never a normal child. There must be full activity, concentration of attention, training in the making of strenuous effort by arousing native and intense interest. This interest may not always assert itself spontaneously, but, lying dormant on account of an unsympathetic or otherwise unfavorable environment, may need an awakening. The child needs exercise, healthful physical exercise, which will help our children to unfold their native strength to the highest pitch.

This plea for the recognition of the natural instincts of children, of their need for motor activity, refers not only to very young children. There are several other periods in a child's life when the motor forces should have the preference. Young girls as well as boys in the pubescent period should have much more physical training and much less mental overstraining than they have now, when just at this critical age they are expected to graduate with all honors from schools and academies.

I quote from an instructive article in the "Child Study Monthly" (November 1897),

Some Fundamental Verities in Education

treating of this same period: "Too many studies are imposed or permitted. Too much time is spent indoors. The recess, instead of being a time for real health-giving physical romps and exercise, is devoted to crocheting, making hemstitched, feather-edge or herring-bone trimming. The pomp and parade of public exercises, especially commencement, the pressure and excitement induced by working for marks and cramming for examinations, are not entirely the fault of the school, but rather the fault of the parents who demand that their own daughters be conspicuous above their mates in school. These girls love to please their blindly ambitious parents and spur their overworked bodies beyond the point of recovery from fatigue, at too great expense of real energy and nerve force. When will parents learn that a whole ton of knowledge gained at the expense of a single ounce of health is far too dearly paid for?" . . .

"TOO MUCH BRAIN WORK AND TOO LITTLE BODY WORK IS THE EVIL OF OUR SCHOOLS."

The brain work referred to here is of course the one-sided stimulation and premature forcing of the higher centres; brain

The Lesson of the Centipede

training thru rational sense training and motor activity will re-establish the balance in these critical periods.

The motor element must be recognized thruout the school course. The present standard of education is altogether false. We must learn to recognize fully the new principle of Learning by Doing which is based upon an appreciation of the natural instincts, not only of childhood, but of the human race.

IV

Experience vs. Book Learning

A certain class of so-called educated persons imagine themselves very superior beings if they can recite from memory an algebraic formula, or know how to spell "parallelepipedon", or can call a sparrow by its Latin or French name. To possess such knowledge is perhaps an enviable thing; yet any ordinary carpenter may throw such a fine person into the utmost confusion by asking him questions upon very simple properties of matter and very common operations, even tho he may not be able to spell his name. We need not undervalue literary education, and may deplore the illiteracy of a still too large percentage of our people as a great evil; and yet believe that ordinary school branches are not all there is of education. A great deal of training can be derived from the common pursuits of life, from the practice of the arts and trades—really a mine of intellectual wealth of which many have very scant appreciation. A "common" man, if he is otherwise effective in his profession, may shame a philosopher in intelligence and "common sense", if the latter be

Experience vs. Book Learning

a mere theorist, with little knowledge of the world of reality.

Learning from books about the tendency of water to seek the lowest level is certainly less effectual than to lay out and build an actual dam and canal for irrigation. And a theoretical knowledge of architecture is surely of less value than the practical ability to construct a Brooklyn Bridge or a Cologne Cathedral. Let us not confuse formal and conceptual education; and while we should give formal training its due place, and be inspired by the lofty thoughts of the thinker and admire the works of the poet, of the historian, or the grammarian—: let us not forget the greatness of the DOERS, the creators among us whose works the others talk and write about, even tho these doers be poor spellers and unreliable geographers. An ingenious machine that seems almost endowed with human understanding; a towering dome giving grandeur and character to an entire landscape; a mysterious tunnel, hewn thru massive mountains and connecting two nations; or even the tiny shoe of a maiden if it fits the dainty foot without constraining the natural movement, are as much proofs of the ingenuity of the hu-

Some Fundamental Verities in Education

man mind, as much triumphs of human creativeness over the brute forces of the universe, as much evidence of the nobility and divineness of human nature, as is the sweetest song of a Tennyson, or the most powerful drama of a Shakespeare. And altho the best work can be done only by the best trained man, by him who is a representative of the civilization of his time at its fullest, it must be remembered that some of the most immortal creations of the constructive mind have been produced by persons who were deficient in formal knowledge, in reading and writing and such things, from the period of antiquity to our own era. All these activities are different expressions of ideas, more or less lofty and comprehensive, but yet borne up by aspiration towards perfection. And while an even balance of all these different powers may make the ideal man, this glory is only for the greatest genius such as may bless the earth from time to time. We humbler mortals have each our special little gift or talent thru which we can render our mite of service. Let us give each child a chance to be himself, to work out his own destiny, to express the ideas and ideals he cherishes as best he can, in his own way, be it

Experience vs. Book Learning

by planting trees, or by fitting machinery, or by writing articles for the daily press. And it is the doing of things which is ever the foundation of the thinking of thoughts; and the thinking of thoughts is vain unless it inspires the doing of things.

V

The Philosophy of the Tool

Man's most faithful servant is his hand, and the hand's complement is the tool. "Tools", says Dr. Paul Carus in his interesting monograph, "The Philosophy of the Tool", "extend the sphere of our existence. Hammers, spades, axes, are prolongations of our hands; the dairy, the bakery, the kitchen, are as it were appendices to our digestive organs, to the teeth and the stomach; engines and railroads are wings to our feet; and machinery of all descriptions are tools that have become independent, but still remain our faithful servants. Their work increases our powers and widens our dominion in nature. Every invention and perfection of tools represents a growth of power. . . . Man's reason has been developed by working with tools, but the possibility of tools depends in its turn upon man's ability to handle tools. . . . The development of reason depends so much upon the proper mechanical employment of our hands, that we even to-day use the words "to grasp", "to comprehend", "to conceive"* as expressions

*Cf. the German "begreifen". G.

The Philosophy of the Tool

denoting the most important act of a rational cognition. . . . The history of tools, and of their invention, is the history of the growth of the human mind."

If history were taught in our schools from the viewpoint of the evolution of culture and civilization, instead of as a record of wars and battles, this conception would long have been more generally accepted. But in the light of the essential facts of history, who can deny that the demand for manual training has a true claim? If man's reason has been developed by working with tools, if the work of tools depends upon man's ability to handle them, has an instruction in the use of tools not a just place in the curriculum of the elementary school? This age of a technical mastery of the world's forces, of commerce and industry, of printing presses, railroads and electric lights, cannot be understood unless the child is introduced into a knowledge and appreciation of the motive power that makes this world of human activity move. From books he cannot get a clear conception of that; there is enough which must be got from them, but which will remain unintelligible to him, a mere shadow, unless he has a basis of experience, typical

Some Fundamental Verities in Education

experience, that can serve him as a key to understand the rest. We ought to take our children into the machine shops and factories to make them see with their own eyes typical illustrations of how things are made, and how the making even of apparently simple things requires much skill and ingenuity. And better still, let us put them to work at such things; let us teach them the use of typical tools, such as the needle, the knife, the hammer, chisel and saw; of typical machines, such as stoves, engines, lathes, sewing machines. They should build and construct dresses and boxes, chairs and dynamos; they should invent: designs, patterns, models, whatever they can. They should represent dramatically, as it were, and at the same time actively and practically, the various busy occupations of life. Then their conception of the world and of human activity will be broadened and elevated.

But it is not industrial training, it is not trade schools for which I plead. They have their proper place at the proper stage, in a differentiated system of public instruction. Here, however, I wish to emphasize the general educational value of manual culture, its broadening influence, its effect upon mind

The Philosophy of the Tool

culture, without which no child can develop to the fullest, were he to become a lawyer, or a merchant, or a shoemaker in later life. Men need to become more effective; they ought to have their chance of experience even in childhood, to make the best of it when the mind is still pliable. They should have an opportunity to test their faculties all around, when it is still time to grow, to mature, to choose. It is therefore no trade exercise, no one-sided work of any kind, whose introduction in schools is desired, but *typical* exercises chosen to illustrate the possibilities of the human mind in the direction of productive activity, just as a well chosen course in reading will illustrate, by typical selections, how the human mind has conquered the world by thought, or mirrored her life in its own emotions.

VI

Not a New Branch, but a Method

In reality it is not a new branch of instruction for which a plea is here made, even tho manual training may mean a reduction of the time consumed by the so-called common branches. But these common branches will be the gainers thereby. The plea is made for a rational method of instruction—the objective, the creative, the experimental method as against the book method. Each school should be, in a sense, a laboratory where all branches are taught by the help of the laboratory method, by experiments and tests which are largely conducted by the pupils themselves. If there exists a well articulated and co-ordinated course of instruction, there is mathematics in the workshop, there is history in the art studio, and better logical training than grammar affords, in the science laboratory; and there is healthful exercise, and power, and inspiration in all these things. The spirit of this method must pervade all school work, so that there be reality instead of names, experience and practice instead of mere rules, self-expression instead of routine work, individuality

Not a New Branch, but a Method

instead of a common average.

Such a method would be an appeal to the natural instincts of the children who delight in objective and constructive activity, whose play instinct is gratified by this work, and who will profit more from it than from definitions, and synopses, and booklore generally; who will do their best in spontaneous activity, and who, being allowed to work in their own individual way, will develop the power of independent thinking. It is by objectifying, as it were, their concepts, by reproducing what they see, or study about, in tangible form, that they will test their power of observation, correct their errors, adjust misproportions, and arrive at accurate ideas.

We need have no fear that the language work of the children will suffer, if so much time and energy be given to manual exercises. On the contrary, our pupils will have a wealth of real things, of things that interest them, to write about. One who can think correctly, will, as a rule, speak and write correctly; and it is a common experience that, when we have something to say, we can say it. But normal children have little to say about fine emotions and self-conscious reflections; they may look up cyclopedias

Some Fundamental Verities in Education

or torment their parents, their older brothers and sisters, for "points", and yet not produce anything of much use to themselves or to anybody else. But they can tell about what they have seen and heard and handled and made, and what interests them. Such work may not be so highflown as an essay on "The Vindication of Xanthippe", or a critical examination into the feelings of a butterfly on a summer's morning,* but it will be more genuine and helpful, especially if care be taken not to mass pupils together, but to grant each a chance to write about what he knows best. Many teachers will testify to the truth of the statement that apparently dull pupils, who were simply weighed down by the routine of mass work, suddenly woke up and displayed a remarkable power of observation and expression when the teacher hit upon a subject which was of interest to them. Thus, when a point of vantage is found, an avenue can soon be opened along which even those faculties which are either dormant, or truly weak, can be reached and more or less developed. And these points of vantage are almost in-

*These topics are actual quotations.

Not a New Branch, but a Method

variably in the nature of objective or constructive work, of play or spontaneous activity which commands the child's supreme interest.

In this way, manual work proves itself as a valuable instrument with which to influence the growth of even the formal arts and more abstract faculties.

But the manual method is a veritable savior of those who are not gifted in literary expression, or formal mathematics, or grammar and such things; whose principal, or only, form of expression is in the *making* of things. They, who are cast out as dunces from the ordinary school, often have a genius of their own which in due time may out-shine that of their classmates who were more successful at school. Should they not be considered? Let us give them their due, their opportunity, a training that is commensurate to their faculties. There are more of them than some may suppose; the schools are full of them, only their native genius is repressed, and they are made to drag on in the primary classes until they can go no further, and are finally allowed to depart to drag on thru life, dwarfed, spoiled, robbed of their birthright. These who, with the ex-

Some Fundamental Verities in Education

ception of conquering geniuses, never get a chance to find their true place in life, and to become conscious of their power and their limitations, help in composing the vast army of the inefficient who drift along, or move in ready made grooves whither they know not, but cannot make their own road, or set up their own goal.

This alone would also prove the moral value of manual training. For he who drifts instead of controlling his fate as far as human effort can avail, will never be a truly moral man. Morality means self-control, self-determination, self-direction. And manual training, sense training, makes for truth—as far as human mind can conceive truth. It sets reality against semblance, fact against error, test against illusion. It fosters a scientific spirit as opposed to opinionism and prejudice. It means, therefore, genuineness, in place of artificiality and verbalism. And it teaches the true dignity, the enormous moral significance of labor. "Work", as Carlyle puts it, "is the grand cure for all the maladies and miseries that ever beset mankind—honest work which you intend getting done." And again: "All true work is sacred; in all true work, were it

Not a New Branch, but a Method

but true hand labor, there is something of divineness." Thru honest labor, the race and the individual can alone be saved from rot and ruin, from decay and degeneration.

But above all, the principle of manual culture recognizes the child's natural instincts. The child is by nature constructive, and in gratifying his tendency to grow intellectually by the work of his hands, we are but in accord with the laws of natural development, which are the same for the race as for the individual. Mankind has reached the present high state of civilization by conquering the forces of nature thru industry, the development of which has ever been the truest index to its mental and moral evolution.



**PART II. ART CULTURE AND ART
EXPRESSION**

I

The Esthetic Attitude

IN this age, when art enters into all the details of life, when it represents the stage of perfection in all manufactures as well as in the reproduction of the beautiful, pure and simple; when the ethical element in esthetic culture has become so widely appreciated; when one who cannot at least *enjoy* the masterpieces of great artists, is hardly counted among the truly educated: in such an age it ought to be superfluous to plead for a recognition of art education in the curriculum of our schools. And yet, drawing and modeling have been denounced as fads which take up time needed for more necessary and fundamental things. More necessary and fundamental things! If it is the end of education to awaken the faculty of judgment and to build up a moral character, to produce refinement in place of crudity and immaturity: is it not worth more to a child to be able to appreciate the stern grandeur of Michel Angelo's Moses or the chaste beauty of a Venus de Milo, and to have learnt to express his own thoughts of beauty, however stammeringly, in a drawing or clay model, or in some

Some Fundamental Verities in Education

constructive way,—than to spell all the words in the English language by heart, or to distinguish between “distributive pronouns” and “compound indefinite pronouns?” Without knowledge of this grammatical distinction he may yet be able to use very fair English, and if he should have forgotten the spelling of “idiosyncrasy”, he can look it up in the dictionary. But an *esthetic attitude*, such as will result from careful training in art conception and art expression, during his young years, cannot be easily dispensed with or quickly replaced.

Drawing, at least, became recognized in the program of some schools a few decades ago, when the wave of the practical-education idea struck them. Under the watchword: We must give our children a *practical* education, many pedagogical sins have been committed. It was claimed that it was of practical benefit to a child if he would learn to draw designs, decorative motives and the like; just as it has been suggested to introduce systematic bookkeeping into the elementary schools,—for such things, it is thought, can be easily converted into dollars and cents as soon as the young person goes out to earn his or her own living, or pocket

The Esthetic Attitude

money. In point of fact, school bookkeeping has proved itself to be of very doubtful value to the practical merchant; and school designing has perhaps been even less marketable. But still, under the name of "*industrial drawing*" a great deal of geometrical construction and conventional designing has been done—and is being done yet in a number of schools—mostly in the form of copying and dictation. *But this is not art.*

Deeper insight into child-psychology has revealed the true function of art education.

II

Expression thru Art

Art training in schools does not mean instruction in drawing only. We shall see later that drawing is in fact the most difficult part of the art. Art training includes modeling in clay, paper cutting, color work, construction, decoration (on paper, in carving, weaving, etc.), and a number of other occupations. *It means beautifying the objects the child handles, or makes, or loves.* It means the beautifying, finishing touch to all his products. Art is the manifestation of the highest genius of the race; it makes the creature a creator; it means a rebirth of the world, from the mind of a human being, so that it may become his *own* world, his *own* life, his *own* glory and perfection. It is thru art that man divines the divine.

Art will pervade all the child does. It is the liberating element in manual culture. It is the noblest form of motor expression. It is *expression*. Let us be definite about this: It is expression as much as language is. The language of the pyramids speaks to us with a powerful voice, and the wall-paintings of ancient Egypt tell us more about her

Expression Thru Art

civilization which has long since vanished from the face of the earth, than even the papyrus rolls of their contemporaries. And long before there were books, there was art. The carvings of the Fiji Islanders, the picture writings of the American Indians, the hieroglyphics of ancient Peru and Mexico are a treasure trove of ancient historic documents.

Thus, even to a young child of a modern father and mother, art is a form of expression which develops even before he can express his conceptions adequately in oral or written form. The child loves to build structures in the sand and mud, or with blocks and toys; to cut out and draw, long ere he can write a composition on the thoughts which these representations embody. He who can read a child's mud pies and scribblings, will get a deeper insight into his nature than he who waits until the child can *tell* him, or *write out* for him, what he has in mind. *This instinct is a relic of race-history* and must be so understood and utilized. With many people, this objective, or graphic, or constructive form of expression will forever remain the best part of their self-manifestation; and the revelation that

Some Fundamental Verities in Education

comes to us of the genius of Raphael in contemplating his wonderful Sistine Madonna, would hardly have been enhanced if he had attempted to write out his conception of divine motherhood with pen and paper. And with most children, representative expression, which is at the same time creative, i. e., art expression, will strengthen the power of right conception and the power of self-expression in general, while, if it is condemned and repressed as idle play, the child's psyche may remain crippled forever.

Children's drawings, then, give a clearer and more comprehensive account of their concepts than their words and, later on, even their written exercises will ever reveal. Let us remember that the power of complete self-expression in language is given to few master minds only and develops slowly in any one of us, and that there are many things at all times which we can better illustrate than tell. Children's drawings expose therefore also all their mistakes in conception, and such exposure will help the teacher to discover, and correct, erroneous impressions. If a child is asked to illustrate a story, his misconception of words often shows itself significantly. A case in point is

Expression Thru Art

quoted from a San Francisco primary school. " 'The Old Oaken Bucket' had been read to the little tots and then explained to them very carefully, and as "busy work" they were asked to copy the first stanza from the blackboard and illustrate it with a drawing. One little girl handed in her verse with several little dots between two of the lines, a circle, and three buckets. 'Lizzie, I don't understand this', said the teacher. 'What is that circle?'—'Oh, that's the well.'—'Why have you three buckets?'—'One is the old oaken bucket, one is the iron-bound bucket, and the other is the bucket that hung in the well.'—'Then, what are all of those little dots?'—'Why, those are the loved spots which my infancy knew.' "

It is well, in this connection, to compare Professor *Earl Barnes'* early investigations on children's drawings. In No. V of his "Studies in Education" (Nov. 96) he reproduces four drawings of Washington and the Cherry Tree, by children, and comments upon them as follows: "Do not the pictures illustrate the way in which a child pieces all the fragments of his knowledge together in making up what to us seem very simple concepts? . . . The child never grasps

Some Fundamental Verities in Education

the absurdity of the combination; for he does not take the whole thing into consciousness at once as we should do. . . . If this analysis of the picture is correct, then we see how the most heterogeneous elements are combined in forming concepts under our direction. Is it not much the same with us when we rise to higher planes? Take for instance our conception of an angel: is it not pieced together from just such odds and ends as these? If this analysis is right, it follows, then, that in education we need to consider not only the fragments that we insert into children's minds, but the blended whole that they piece together."

The use of drawing in this direction appears obvious. And it is well, apart from any ambition to be artistic, that we should learn to express our concepts graphically in some adequate degree, to supplement our language, so that we may make our meaning clear in as complete a manner as possible, when occasion arises. If we wish to have a certain pattern made, or give a direction as to some piece of furniture we desire to have fitted into a certain space; or if we want to describe an occurrence that we have witnessed; or if a physician desires to fix some

Expression Thru Art

microscopic observation on paper; and in a thousand other ways,—some skill in drawing to express our thoughts, or to record our observations—be it diagrammatically or by way of a more or less perfect representation of the object—will be found exceedingly helpful and often indeed indispensable. Our words not infrequently prove insufficient to describe what we have in mind.

Moreover, an effort to draw an object will intensify the clearness of our perception, and bring out, and fix in our mind, many details that would otherwise have escaped our attention. *Drawing shares in this respect the virtue of manual reproduction and construction*, and we shall see later that the artistic correlative to manual construction, viz.: clay modeling, has its peculiar excellence. It is well to encourage the *drawing of the objects of study*, in the laboratory, in geography, in history, etc., to produce more lasting and more exact impressions, and to test the correctness of the concepts.

I do not pretend to say that this kind of representative drawing is art proper, or art as yet; just as little as the compositions of young children have value as literature. But it helps in the development of the self, and

Some Fundamental Verities in Education

points towards art; it is as legitimate a form of expression as any other.

Drawing, it has been said, is the general language of construction. It enters into manual work at every point, and geometrical understanding would be impossible without it. In this form, it is not an immediate art expression, but may be a means *towards* it, if the end sought is the expression of an art idea, as in architecture. To be able to read a working drawing, a plan, a chart, and to *make* such drawings, is a necessary requisite in manual work. But this does not imply that a course in the technique of drawing, in mechanical drawing, should come first. Such a course would, in many cases, only kill the spontaneous art instinct and art enjoyment. There is not much need of such training for children, certainly not in the lower grades. Exactly as we must not apply the adult's standard of accuracy to the productions of the child in the field of manual training itself, just as little is there need of enforcing exact technique in the drawings that enter into that work. Only when the child himself feels the *need* of training in technique, should instruction therein be supplied. As a rule it will suffice to point out a few simple

Expression Thru Art

rules and devices, and let the rest come by practice in connection with actual exercises. In the highest classes, in connection perhaps with the more scientific study of geometrical problems, in architectural drawings to a scale, and for the purpose of assisting the pupil in getting better control over the muscles of eye, hand and fingers, to secure finer adjustment, more stress may justly be laid upon exact drawings. But even here, we must exercise discretion and not elevate an exactness which is possible to perhaps only a few, into a fetich to be worshipped by all. At any rate, *young* children should be saved from the tyranny of this superstition.

I wish to warn art teachers against the gospel of the straight line. The straight line is an abstraction. Nature knows of no absolutely straight line, except perhaps in minute proportions. The straight line is a mechanical invention, but has no virtue in itself except for purely mechanical purposes—for manufacture in the trade sense. Our children have nothing to do with it. They are not ripe for it—fortunately not. Their minds cannot yet be reduced to a rectilinear conventionality. There is no character in the straight line, just as a man whose path

Some Fundamental Verities in Education

in life is absolutely straight, is either an angel or a fool; either a mechanical contrivance, a soulless pedant, or a bigoted fanatic, but not one with a genuinely human character. I am afraid of the infallible. To make the young child a victim of the soulless straight line, is as cruel as it is useless.

True art is more than reducing the objects of nature to a geometrical "type", or than their mere mechanical reproduction; in the same way as literature is more than an enumeration of the things the author has in mind. Art and literature represent the *individual attitude of the artist or author* towards nature and life; they show how nature and life picture themselves in these human minds. No great poem, no great painting, no great work of sculpture that does not suggest a noble thought or a noble feeling, a thought or feeling that had been in the minds of their makers, struggling for expression. A great artist, as well as a great poet, is first a great *man*, a man with a noble soul, which is revealed in his works. Art is self-expression, and from it we may read character as we do from literature.

Not every one can produce literature that will become the common property of the

Expression Thru Art

world, because not everyone can think eternal thoughts, or has literary power to express them in immortal form. But every one can learn to express his own thoughts in his own words—not very fluently perhaps, but in a manner, or style, peculiar to himself and which is as much an index of his mental calibre as is the thought itself. Likewise, altho not everyone can produce works of art worthy of a Phidias or Raphael, yet everyone can learn, in a measure, to express himself in art form, if he is left free to do it in his own way which will be characteristic of himself, provided he *has something to express*. If we understand art to mean individual expression of a thought or feeling, we shall at once perceive that for every attempt to draw or model anything, there must first be a *thought* or a *feeling* in the child's mind, one which is his own, which is more or less spontaneous, first hand, not second hand, intense, full of motive power so as to struggle for expression; and second, there must be as little as possible of restraint, of conventional rule, and the largest possible latitude for individual form of expression, freedom and individuality.

There must be, first, a thought or feeling

Some Fundamental Verities in Education

in the child's mind that seeks expression. The clearer this is understood, the better. A realization of this fact will once for all do away with the senseless exercises so common in many drawing courses, and which mean nothing to the child. If we study the child life of our greatest painters and sculptors, we shall find that they did not go to work drawing straight lines, or a cube, or modeling a perfect sphere. Perhaps there was a time in their life, later on, when their minds were maturer, when they had to endure the drudgery of technique to perfect themselves in their vocation. But, while they were young, they did not go for inspiration to cubes and spheres. They drew what they loved most—they took a bold hold of anything in their environment that appealed to their innermost soul on account of its beauty, its harmony of form or color, its meaning and association. They would beautify by decoration such things as were dear to them: the first leaf in an album which their mother had given them, or a scarf they would present to their sister, or perhaps, blushing and full of strange emotions, send to their first girl love. And nothing would seem to them too difficult to attempt.

Expression Thru Art

They gloried in color, they were enraptured by the multitude of wonderful forms surrounding them. Oh, for that transcendent ecstasy of youth, when all the world is ours, when we do not yet know our measure, when we strive for the highest, like unto the babe that will, with its tiny arms, reach out for the shining moon! Let us treasure it in our memory, let us jealously preserve it in our children. They will run against the walls which hedge in the province of the possible, only too soon; and when the time of disappointment, of disillusion, arrives, then we should stand at their side and guide their steps, and revive their hopes, and strengthen their power, so that they may build up a new world of reality which will be no less their own than their world of beautiful fancy had been. What to the child whose mind is not yet rational would have been like cruel tyranny, like lack of sympathy, what would have meant for him a disenchantment, a spoliation—will appear to the struggling youth like a new revelation, a succor and relief whose immediate need is deeply felt. We must render technical help only when it is needed; or it will have the effect of officiousness and repression.

Some Fundamental Verities in Education

Besides, the *time* we can devote to art education in school is so short, so few of the pupils will ever be in a condition to pursue art as their life vocation when they will need technical drill, that we should bend all our energies upon inspiring their youthful soul with a true interest in, and love for, the beautiful. True interest and true love mean not merely an attitude of contemplation, of admiration for beautiful objects and works of art; but the desire to *do*, to be ourselves a power, to create as best we can.

Art work should therefore be co-ordinated with all those activities and interests in which the children take their most spontaneous and deepest delight. Let them illustrate the stories they enjoy most; design and weave in color blankets for their doll's beds; model vases and decorate them with gay flowers in water colors as a Christmas present for mother; or even make their own clay dolls in imitation of their elders; whatever fascinates their fancy, or interests them in their lessons, in history, geography, literature—whatever has a pictorial element (and what has not, as all our concepts can be reduced to more or less distinct images from the world of objects!): all these are so many chances

Expression Thru Art

for art expression.

If we watch the children's own spontaneous activity in this direction, we shall find that they do not care much for sentimental or contemplative subjects. Their interest centers in action; in motion rather than in repose. Stories where there is most of action have the intensest attractions. In like manner they will try to portray action, that is, human beings and animals in action; and even where there is a decorative purpose pure and simple, they will often, like the ancient Greeks in the decoration of their vases, prefer illustrative to ornamental motives. It is more particularly the human form which attracts attention, and is represented over and over again. How the human form can be converted into a decorative motive of often grotesque effect, a study of the art of the North American Indians will soon reveal. (Cf. Figs. 1 and 2.)

The same line of thought suggests the reason why I have pleaded for freedom from restraint, from insistence upon rules, and directions, and so-called "systematic development". Art expression is a very sensitive thing. It is just in the *beginning* of its evolution in the human soul when it bears

Some Fundamental Verities in Education

the *least* interference. Such interference would quickly kill the germ of spontaneous creativeness. And it is a great mistake to imagine that you must first learn to draw, or model, a *detail*, before you can produce the *whole*. The child sees the whole first, and the part last. To work from details to the whole would be just as absurd as to insist that a child must first learn to spell all the words he may possibly use some time, or master all the rules of grammar and syntax, and write perfect *sentences*, before he can be allowed to express himself in language, by writing a letter or a composition. Sad to say, this thought-killing method is still the rule in only too many schools, and there are some whose pupils are not given an opportunity to say what they really think until very late in the course, if at all. The result is a dead thing—rules of grammar instead of a living thought. The truth of the matter is that the children will learn to express themselves by intuition, by imitation, by absorption; that they will be able to write or speak with tolerable accuracy *when they have something to say* and are given frequent opportunities to express themselves; that if their ideas are clear and cor-

Expression Thru Art

rect, they will find little difficulty in adequate *expression*. The prattle of children is so delightfully suggestive and to the point, before it becomes hedged in by rules and "grammaticated", that its repression is a crime against the child-soul and its inalienable right of self-preservation. What we must work for is the *thought*, and the details will take care of themselves, at least for a while.


Likewise art is expression: we must work for the thought first and primarily. Then as to method, attention must be paid to the *general* aspect of things, to the composition as a whole, to the character and swing of the figures, rather than to the details. It is an error to think that a child must draw leaves before he can draw a tree. As a matter of fact, it is easier to draw a whole landscape, with forests, and lakes, and houses, than to draw a single leaf, a single bough. Illustrations of this fact will be given later. We ought to work down from the whole to the parts, not exalt the parts to such an artificial importance that we may never reach the whole.

III

An Experiment, and Conclusions Therefrom

In the winter of 1896-97, an experiment was made in all classes of the "*Ethical Culture School*" of New York, under my direction, to test the pupils' ability to represent the human figure in clay, free-hand paper cutting, and drawing. Some of the results, all of which were truly remarkable, are here reproduced. Figs. 3-7 show some of the clay figures made by the children of different grades. The originals were from five to twelve inches high, and while the clay was fresh and the figures intact, surprisingly expressive, spirited, and characteristic. No general directions were given as to what figures to model or how to go to work. All figures are imaginative. *Figs. 8 and 9* are freehand cuttings from the III. Grade (pupils of about eight years of age); both were made from the object, a child posing for the class. *Fig. 9* represents a boy with a cane in his hand; *Fig. 8*, a girl writing on the blackboard. *Fig 10* is a crayon drawing from the same grade; *Figs. 11 to 17*, from the IV. Grade (as to *Figs. 11 to 13*, it may be said



Figures 1 and 2. Moqui Canteen, New Mexico. Collection of U. S. Bureau of Ethnology, 
Catalogue No. 87390

B

C



A

B

Figure 3. Statuettes of the human form, by kindergarten pupils. lower left hand corner. In the middle of the picture is bunch of grapes by a First Grade pupil. Group A: Red Riding Hood and Wolf, by Second Grade. Figures B, Squirrels, and C, Swan, by Third Grade.



Figure 4. Statuettes by Fourth Grade
Figures 3 and 4. Clay Figures



Figure 5. Statuettes by Fifth Grade



Figure 6. Statuettes by Sixth Grade



Figure 7. Statuettes by Seventh Grade

Figures 5, 6 and 7. Clay Figures

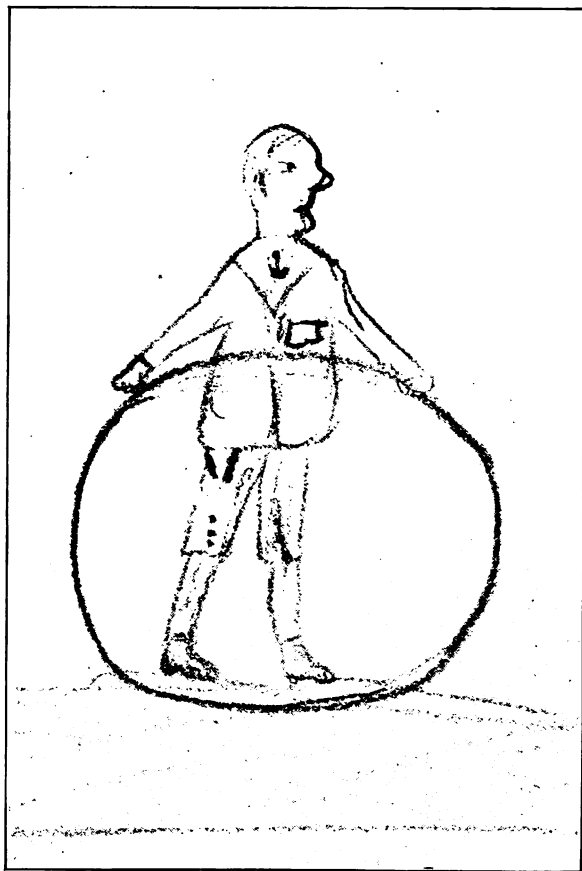
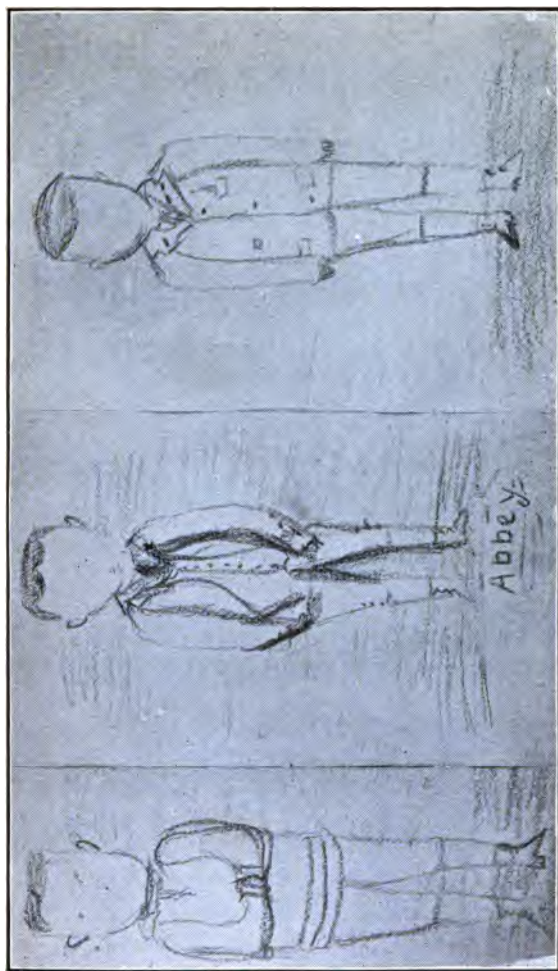
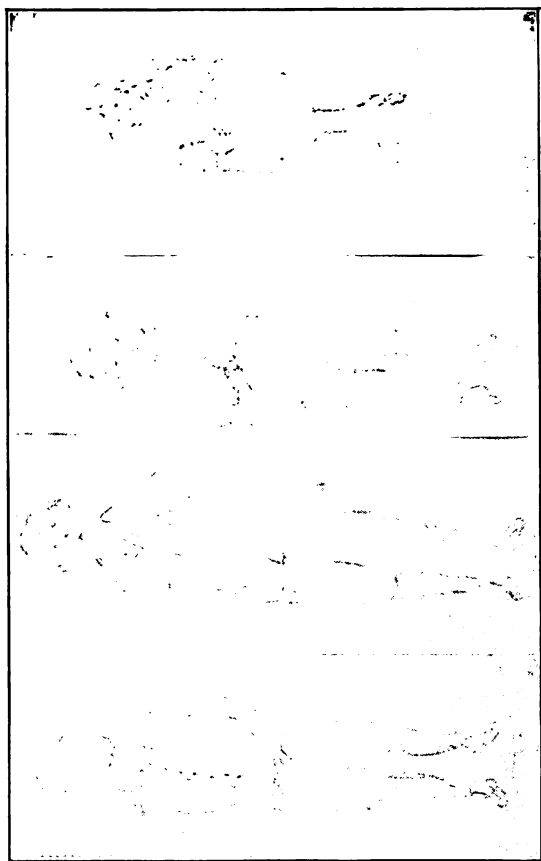


Figure 10. Crayon Drawing Grade III



Figures 11, 12, 13. Crayon Drawings Grade IV

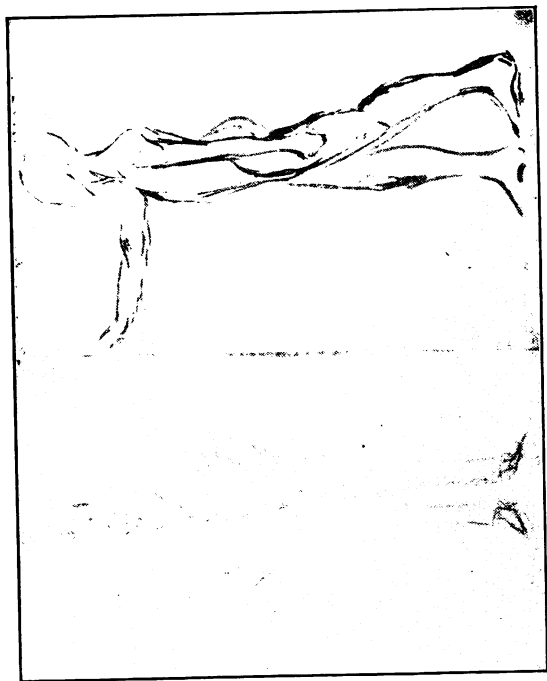


Figures 14-17. Crayon Drawings Grade IV



*Figures 18 and 19. Crayon Drawings
Grade V*

Grade VI



*Figures 20 and 21. Crayon Drawings
Grade VIII*



Figure 8—Girl Writing *Figure 9—Boy with Cane*
Freehand Cuttings, Grade III

Some Fundamental Verities in Education

that the direction was given to omit the face if that proved too difficult); *Fig. 18*, from v. Grade; *Fig. 19* from VI; *Fig. 20* from VII; *Fig. 21* from VIII Grade. *Figs. 14 to 17* and *Fig. 21* are by children who showed decided artistic talent; the others were drawn by ordinary children. In the VIII. Grade, some previous training in drawing the human form had been given; in the lower grades, such practice had been only incidental. All the drawings, except *Fig. 21*, were from the object, individual children posing for the others. It should be said that drawing and modeling was a regular feature of the curriculum of the school where the experiment was made.

Without discussing these productions in detail, we may draw the following general conclusions:

(1)—Children are much more creative and able to express a thought or feeling artistically with characteristic force than is generally supposed, or than the ordinary art courses in schools will allow them to put in display and practice.

(2)—They are better able to represent the general swing and character of a whole, even one which is apparently so difficult as

An Experiment, and Conclusions

the human form, than to produce details accurately and in proper relation to the whole.

(3)—There is no regular progress in ability and skill from the lower to the higher grades, individual differences and periodical fluctuations manifesting themselves at every step.

(4)—In clay modeling, the results are most satisfactory, comparatively, while drawing seems to represent the greatest difficulties. Freehand cutting occupies an intermediate place.

(5)—Freedom from restraint, from minute directions, and from mechanical exercises produces the best results.

With this last conclusion I do not wish to imply that a child needs no guidance at all—that it is enough to give him a piece of clay, or a sheet of paper and a pencil, and tell him, Now, go on. Certainly he needs advice, he needs suggestion. But the former should be given, as stated before, with much discretion on the part of the teacher who ought to have himself the art spirit, and only when the child actually needs it; not prematurely, or in a nagging way. And the teacher's function is to regulate the child's attempts so that he may learn to choose the

Some Fundamental Verities in Education

best, and not *waste* time. A child is so open to suggestion, and so dependent upon it.

There are several other points to be considered in this connection:

First—One of the commonest mistakes in directing children's work is to insist upon completing and correcting a piece of work once begun until it is "perfect". The same is often being done with regard to essay writing: children are made to write an essay over and over again until it is "free from mistakes" and until the child is sick and tired of it. We must not measure child's work by an adult standard. If this is true of any kind of activity, it is particularly true of art expression which will degenerate into drudgery as soon as we deprive it of the character of a humanizing enjoyment. If a young child is forced to toil over a drawing or model after he has lost interest in it, his results will not count for much. Better let him begin a new piece of work, even tho he may not have time to finish the task. Whatever virtue there is in the completion of a work once begun, in the patient toiling on until the task is done: such virtue is not the young child's. A child's attention cannot be fixed long; his

An Experiment, and Conclusions

nature demands frequent changes of activity and interest. The child is making only a *beginning* of life; and it is our privilege to help him in making a *good* beginning. Then we can be hopeful that he will *end* well. The difficulty lies just in *beginning right*. The child often fails in the execution of things because he *began* wrong. His is not the ability to plan ahead—such circumspection is but slowly acquired. To profit from his errors is the wisdom of the sage: the child possesses little of this wisdom. He must begin many times before he will realize his error. Therefore, rather than insist upon nice and exact finishing, let us encourage efforts to *begin* right, and be satisfied with otherwise crude execution. It is remarkable how quickly children will progress after they have learnt how to begin, and how much pleasure they will *then* take in finishing.

There is another side to this caution. The toilsome finishing of one piece before another is taken up will not only seriously diminish the child's *interest* in his work; but it will consume an undue amount of time and will thus deprive him of the benefit of trying his hand on a greater variety of sub-

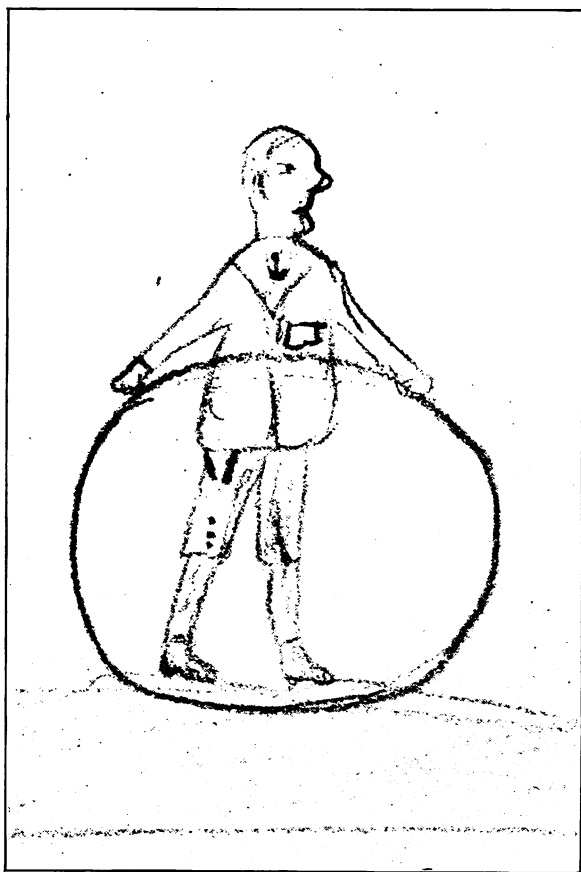
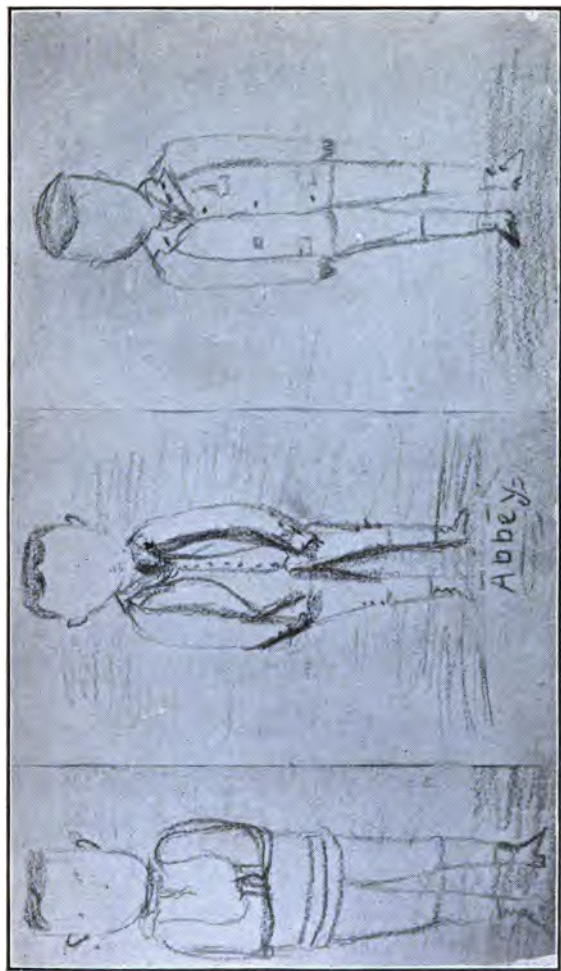


Figure 10. Crayon Drawing Grade III



Figures 11, 12, 13. Crayon Drawings Grade IV

IV

Interpretation and Symbolism in Art Expression

Let us compare a photograph with our mind-picture of the same scenery. To produce a photographic picture which has something of the quality of a mental image, is in itself an art. Ordinary photographs are as a rule disappointing; they contain many details of whose presence we were hardly aware and which disturb the harmony of our impression; and the very things that we are interested in, look much smaller and more insignificant than they live in our memory. The reason is this: a photographic camera is a mechanical eye which records in a mechanical way. But the human eye is the organ of our mind. What is of no interest to us we hardly see at all, while those objects on which our interest is focused stand out boldly, and really out of natural proportions. And then, a very indistinct visual image may call up very distinct mental images, or memories. Thus we supply from our *memory* many details which as a matter of fact we do not *see* at all. Let us imagine ourselves watching a passing



*Figures 18 and 19. Crayon Drawings
Grade V*

Grade VI

Some Fundamental Verities in Education

tinct, the chances are that we shall recognize few of these details. We had supplied them from our stock of previous experiences; we had seen them with our *mind's* eye, because we knew they were there. But to our physical eye, these details were really indistinguishable.

This means that we *interpret* what we see according to our greater or lesser stock of previous experiences; that we *magnify* objects which are familiar or of interest to us; that we single them out; while unfamiliar or uninteresting objects remain in the background. In primitive art, important objects or personages are invariably represented in larger proportion than the rest of the picture.

As in oral descriptions, different persons will give very different accounts of the same scene or occurrence, so artists will produce very different representations of the same scenery. The reason is, they were differently impressed; with their minds' eye they saw different things in different relations. Here again, we have a corroboration of the truth previously emphasized, viz., that art is not a mere recording of facts, but the expression of an individual attitude.

Interpretation and Symbolism in Art

It seems very plain, then, that *children* will represent things quite differently from what adults might expect. They will see with the minds of children, not with that of an adult. Things that interest them most, tho they may not seem very essential to us, will appear most prominent, even magnified, in their drawings; and their knowledge of the quality and structure of objects differing from ours, their pictures will differ. But they will often record all they know of an object, even tho, at the time of drawing, they did not see these details, and by the laws of perspective could not possibly have seen them from where they sat. They will sometimes draw in a manner as if they could see around, or thru, an object. Fragmentary and unharmonized, unconscious of law and logical order as their thinking is, so their pictures will be a conglomeration of unharmonized representations which to our cultivated and trained minds may appear as very bungling attempts at art. And yet, we ought to judge them on their own merit, and understand the child's standpoint and stage of development.

Then, after all, art expression is in its very nature *symbolical*. If we look at a

Some Fundamental Verities in Education

bold pencil drawing where a very few telling lines indicate a hill with trees, a cottage on top and the sea in the background: we admire the sketch, and it means something to us, not because it is an exact copy of nature, but because the art of the designer conjures up in our mind memory images of hills and trees and the sea. We clothe the poor sketch with all the colors of life from our own previous impressions. Or rather, the drawing opens up an avenue of thought to us; *thru* it, as it were, we view distant scenes as once they have been present to our enraptured eyes. No matter whether the artist would add color to his sketch: the most ingenious painting falls far short of nature and is but a symbol of what it represents. By a skillful arrangement of color effects we are *reminded* of actual sense impressions, and our memory supplies what a picture can never exhibit. We *interpret* pictures as we interpret the image of real things on our retina, by what we see with our *inner* eye.

Symbols are all more or less conventional; and if art is symbolical in character, it must use conventional ways which only the initiated will fully appreciate. It may be

Interpretation and Symbolism in Art

difficult for us to realize that our masterpieces of art employ conventional symbols needful of interpretation. And yet, this is a fact, tho we may admit that art has reached a perfection which makes it a much more ready vehicle of thought than it was on any previous stage. Egyptian paintings look very awkward to us, but to the ancients they meant as much as a modern painting does to us.

Conventional symbols in art will correspond very closely to the ability of the mind to interpret the world around it, even tho the mind will often *outgrow* one set of symbols more quickly than it is able to construct a new, progressive set. Our modern pictures, however, are not readily intelligible to a savage, or a young child. And furthermore, the difference in artistic taste may in the last instance be explained by the assumption that there are individual differences of interpretation—that the symbols of one are not the symbols of another—that one way of painting a picture may not as readily call up mental images in the minds of certain individuals as another. A visit to one of the larger galleries where different schools of painting and sculpture are repre-

Some Fundamental Verities in Education

sented, if some attention is paid to the remarks of the people looking at the pictures and statues, will soon convince everyone of the truth of this observation.

All this simply proves that there are individual attitudes in art expression as well as in art appreciation. Applied to children's work, it means that we must often respect their individual form of expression when it may be difficult for us to understand it. And there is a deeper reason for judging of children's productions in this sense, on their own merits.

V

Artistic Culture Epochs

Symbolism in artistic expression is manifestly not an arbitrary thing; it is not manufactured, or invented, by some artist, or clique of artists. It represents a mode of thinking; it corresponds to an attitude of the mind, to its degree of ability, as said before, to apperceive and interpret the world around us. The *form* in which the artistic idea expresses itself, is a *growth*, as is language which is thoroly symbolical. Looking up the words of the English language in an etymological dictionary will soon convince us of this fact. Growth, however, is subject to biological laws, and its subsequent stages are determined by the working of these laws. It is exceedingly interesting to study the stages thru which our race has passed, in art expression. There is a long way from the art of the savages, thru Assyrian and Egyptian, to Greek and Roman art, and from there to our own time. And there are detached branches, or separate saplings, that had their own growth, such as Chinese and Japanese art. The true significance of the conception of art expression as a *growth*, sub-

Some Fundamental Verities in Education

ject to *biological laws*, will reveal itself to us if we remember that there is a close parallelism between the development of the soul of the individual and that of the race. A child passes from birth to maturity thru a continuous series of stages, or periods, each of which is a revival of an epoch in the history of culture. He passes thru the same stages of mental development thru which the race has passed. Observations of children have established this fact beyond a doubt. And this *sequence of mental culture epochs* is but the spiritual side of a well-known biological phenomenon, viz., the evolution of the human *body* from its incipient embryonic stage thru a series of forms which broadly correspond to the characteristics of lower forms of life, until finally the mature human form is perfected. And as even the adult body contains a number of so-called rudimentary organs which are of no apparent service in the present stage of human development, but are relics of past stages: so there are in our mind many rudimentary traits, or atavistic peculiarities, which remind us that we owe our present civilization to a process of long evolution from savage conditions. In chil-

Artistic Culture Epochs

dren, these traits are easily distinguishable by the psychologist.

In the development of art expression, we can clearly discriminate these mental culture epochs, from childhood to adult age, and this very fact proves, as said before, that the deeper cause of difference in the *form* of artistic expression, between the child and the adult, is due to biological laws even tho we may not yet understand the psychological process. Some experiments which I had occasion to make have given some degree of certainty to this view.

These experiments were made at the "Ethical Culture School" in 1894, for the purpose of ascertaining in what measure children's drawings would correspond to savage and Egyptian drawings of the same kind and of kindred themes. In Egyptian work, all objects are so drawn as to expose their characteristic side to view. The ground, roads, meadows, ponds, are drawn as they would appear from above; a man standing on the opposite side of an oval pond looks as if he were placed on a blue bag. Let us look at *Fig. 22*, a pond with palms.* The

*From Dr. K. Oppel, "*Das alte Wunderland der Pyramiden*", Leipzig, 1881, p. 148.

Some Fundamental Verities in Education

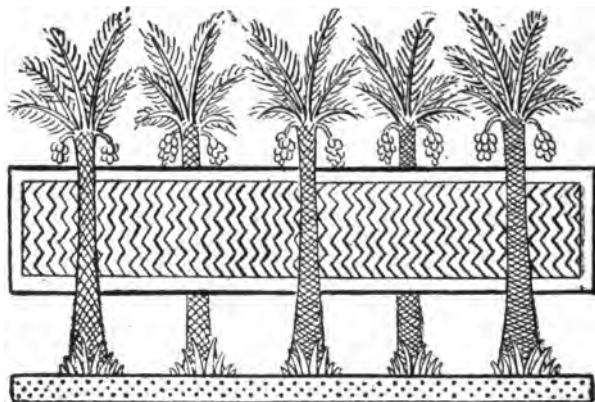


Figure 22

artist paints the pond rectangular in shape, lined in with yellow sandstone, just as if he were drawing a diagram or plan, or working drawing of it. On the side of the pond towards the observer there stand three palm trees; on the opposite side only two. Consequently, three of them are drawn in front of the diagram, the other two behind it, as it were. As the trees are of about equal height in nature, they are drawn equally high.

In the experiment, the pupils of all classes were requested to draw a pond with trees in front and on the opposite side; the rectan-

Artistic Culture Epochs

gular form was mentioned only to the primary and grammar classes. No child drew the picture exactly in the Egyptian style. Five groups could be distinguished. The most immature method showed a *radial* arrangement of the trees (*Fig. 23*). This meth-

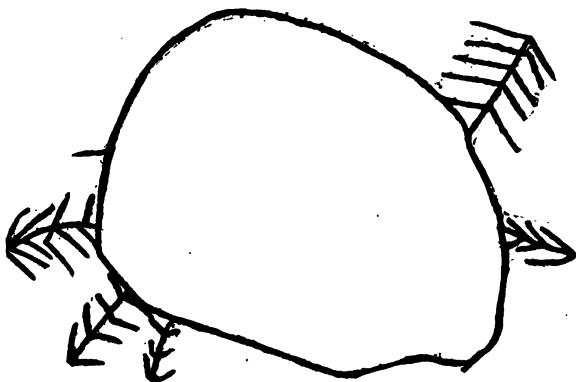


Figure 23

od was characteristic of 43 per cent. of the kindergarten pupils; some pupils were found in every class up to 12 years of age who had not advanced beyond this primitive, or rudimentary, form of representation. The same method is recognized in the Egyptian picture of the brickmakers' pond, in *Fig. 28*. It is parallel to the one employed in *Fig. 24*,

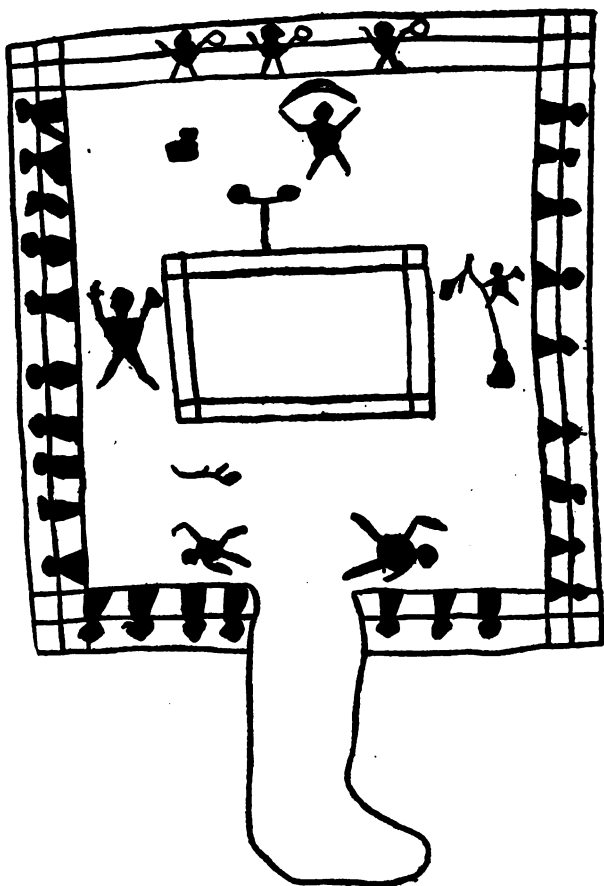


Figure 24

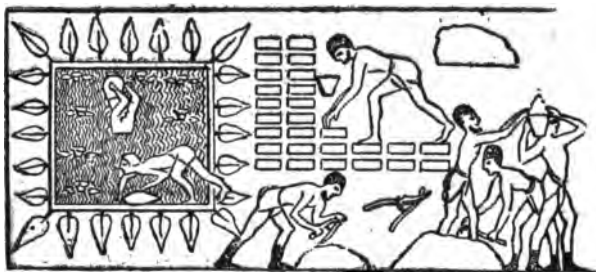
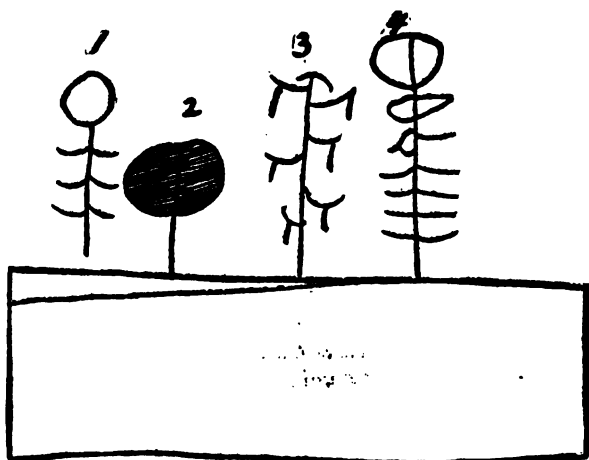


Figure 28

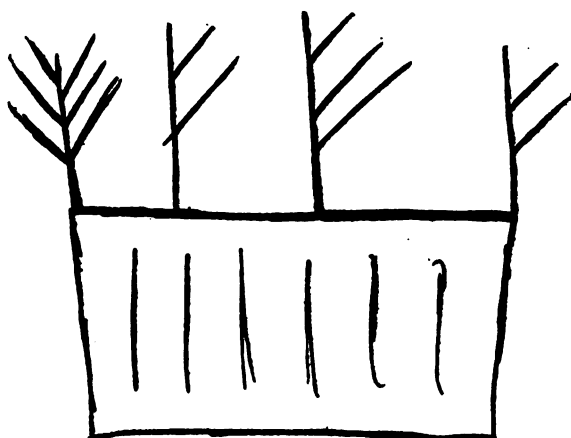
representing a Shaman's Lodge (Alaska); the figures, arranged radially along the four sides, are meant to designate people seated around the walls of the Lodge.* In the second and third groups, the pond was drawn strictly rectangular, as in the Egyptian drawing. About 50 per cent. of all drawings were of this class. Group II had the trees arranged in various symbolical ways of which *Fig. 25* is a fair example. With this may be compared *Fig. 26*, a symbol taken from an Ojibwa Chant, meaning "It is growing, the tree". The symbol represents "Mide wigan (the Medicine Lodge) with trees growing around it at the four corners."*

*Taken from the Annual Report of the Bureau of Ethnology, 1888-89, p. 507.

*Report of Bur. of Ethn., 1888-89, p. 245.



Trees 1 and 3 are meant to stand on the opposite side; 2 and 4, on the near side



Figures 25 (upper), 26 (lower)

Artistic Culture Epochs

Group III is represented by *Fig. 27* where the trees are drawn in natural position. Another group shows the rectangle of the pond drawn more or less in perspective; and the fifth, represented only by the maturest children of the highest classes, drew a perfect landscape.

Another set of drawings was based upon *Figs. 28 and 29*. *Fig. 28* shows Egyptian prisoners of war making bricks;* the bricks

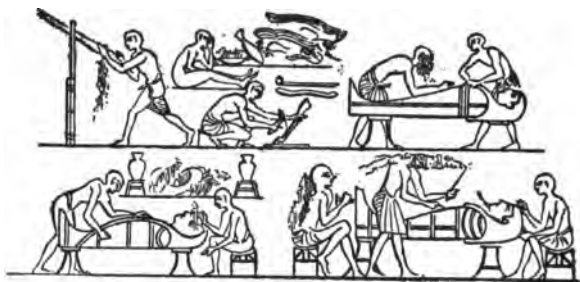


Figure 29

are arranged in rows on the ground, and not in piles as it may seem. The five groups in *Fig. 29*, Coffin-makers,* tho drawn one above the other, each on a separate base,

*Oppel, loc. cit., p. 144.

*Oppel, loc. cit., p. 143.

Some Fundamental Verities in Education

must be considered as being really on the same plane, so that, e. g., the glue pot is on the left of the resting man, and the two vases are standing behind the coffin, and would have been partly hidden from view had the artist drawn the picture in perspective. The two pictures illustrate the principle in Egyptian drawing that objects whose real position is *behind* one another, are drawn *above* one another; whatever the artist knows is there and is exposed to view according to this principle.

In the experiment at the "Ethical Culture School", the pupils were invited to draw a picture, representing a shoemaker on this side of a road, working in the open air, and a carpenter at work on the opposite side. *Fig. 30* is a specimen of the manner in which a majority of the children solved the problem. It requires no comment.

In order to prove, by way of parenthesis, that we are here dealing with actual developmental periods in the life of the individual child, the following three sketches are presented (*Figs. 31, a, b, and c*). All three are the work of the same individual who is now a well-known landscape painter of original powers. *Fig. 31a* exhibits his response

Artistic Culture Epochs

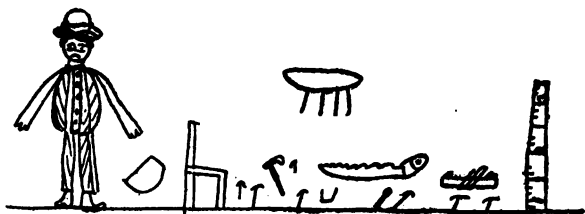


Figure 30

to the problem described, when he was a boy of 13 in the Fifth Grade of the Ethical Culture School. The interesting still-life (Fig. 31b) was sketched by him in water color when he graduated from the school, at the age of 16 or 17. Fig. 31c is a five-minute sketch of the author of this volume, drawn by the same artist a few years ago. The progress in conception and perspective

Some Fundamental Verities in Education

is most instructive. It must be remembered that the man's power is now in landscape painting.

It may be added that the statuettes made by the younger and the less artistic children (cf. Figs. 3-7) remind one very strongly of Assyrian statuettes of which there may be found a large and instructive collection at the Metropolitan Museum of Art, in New York.

The parallelism between the work of children and that of savages and ancients, as demonstrated by the experiments of which there has been here given a brief account, is certainly very striking. It can be observed that the same biological laws that determined the working of the human mind in the race, are still at work in the evolution of the child-soul from infancy up to adult age, and shape the children's artistic expression. All children pass thru a sequence of epochs altho perhaps not everyone thru all, or not all thru the different periods in exactly the same way. The difference is determined by different sets of hereditary and environmental influences. Some may, in this form of expression, never develop beyond the savage stage, tho representing modern culture in other forms

Artistic Culture Epochs

of expression. With others, it may be just the other way. But we learn from this at least that we must take children on their own terms, and judge their work from the standpoint of psychological evolution. Also, that art instruction can well be correlated with history, and that the teaching of history, which is a record of these culture epochs in the development of the race and of individual nations, might perhaps be so adjusted that these epochs be represented in an order which would coincide with the corresponding stages in the child's mental advancement. This, of course, is a topic by itself. It has been demonstrated, however, that children will take great interest in the creations of savage art; and that they will, with genuine enthusiasm, work in ancient or primitive fashion.

This work may consist in direct reproductions of primitive creations; and in inventive and imaginative models and drawings of new themes, after studying samples of primitive art treating of parallel subjects or intended for similar purposes. Especially in modeling and designing, children will imitate savage and ancient patterns, or work

Some Fundamental Verities in Education

inventively in primitive style, with surprisingly good results. Teachers are aware of the ease with which children reproduce Indian pottery. Model 5 in *Fig. 38* is the reproduction from memory of a Grecian capital; the upper model in *Fig. 32* represents the Finding of the Child Moses, modeled after studying Assyrian bas-reliefs; the middle figure on the same plate is a frieze for a temple of Ceres, composed by a child after studying Greek models; and *Figs. 33-35* are colored drawings of an Indian vase from the object, with original decorations designed in savage fashion.

Showing them samples of primitive art has also this advantage that the children, seeing art work to whose standard they can attain, will take courage to apply themselves, while the holding up of modern standards may sometimes produce a very disheartening effect upon youthful students. Indeed, it requires much discretion to create the proper environment for young children; and tho I am heartily in sympathy with those who desire to introduce reproductions of the masterpieces of art into every school-room, I feel that in the selection of typical representations, samples of primitive art

Artistic Culture Epochs

must not be omitted. And we would do a great injustice to primitive artists if we would suppose their work to be altogether crude. It is, in many respects, very crude indeed; but there are, especially in decorative effects, pieces of exquisite beauty among the productions of savage art.

We should be deceived if we would expect a daily, steady and regular progress in the child. The development of a child is in outward appearance a fitful process: there are periods of rapid improvement alternating with times of indolence and even of seemingly retrograde movement. We need not worry over this phenomenon. A child does not grow in concentric spheres; but his vital forces swell now in this, now in another direction. Like the oak whose branches spread to all points of the compass, in irregular order, and which during the winter only *seems* to sleep while the forces within are preparing for a new budding time: so the child has his seasons.*

*Cf. p. 81, No. 3.

VI

Suggestions as to a Course in Art Training

If I were to suggest a *series of exercises* in art expression, I should recommend first of all, *conceptional* work. By this I mean representations from memory such as the children are most interested in. All of their spontaneous work is conceptional, that is they represent from memory things, or scenes, they have seen and witnessed. This work can be made very interesting and helpful, in that it will encourage the children to observe more carefully. It will also open up to the teacher a new avenue for studying the child—what the child likes best, what he observes most closely, under what conditions he lives, what he remembers most readily, etc.

Another group of work is also conceptional, but with this difference, that the object to be represented will be placed before the children. This is what is commonly called *objective* work. But the child does not really work from the object as this is usually understood; he does not produce a copy of the object, more or less perfect in proportion to his greater or lesser skill. None of

Suggestions as to a Course in Art Training

us draw *from* the object, or draw the *object itself*. That is an elliptical way of putting it. We draw *what we see* (and all of us see with different eyes), and *as we see it*, that is, *as the object impresses us*. In other words, we draw from our mind, we draw the mental image of an object. The presence of the object, while we reproduce it artistically, will intensify the mental image; it will re-enforce our concept. But between every looking up at the object and every looking down at our paper or lump of clay there may pass only a moment of time, our work itself is no less from memory than when the object is not present at all. This is the reason why individual differences assert themselves so plainly in the drawings or models of a class of children working from the same object. In each one's mind, there is a different image of the form from which they work. Hence this method also deserves the name *conceptional*. A good way of procedure is to connect the work with an observation lesson, and sometimes to remove the object of study before the children begin to draw or model it.

Another exercise is *imaginative* work

Some Fundamental Verities in Education

which is practically artistic composition: the putting together of conceptional elements into a new combination to form a new whole. Illustrative work belongs here, illustrations of stories, events in history and the like. Children have a very lively imagination, and if given scope they will surprise us by their ingenious compositions. The Moses bas-relief in *Fig 32* is a sample. *Fig 36* is an imaginative drawing, "Priam's visit to the Tent of Achilles", by an eight year old. *Fig. 37* is a winter scene composed by a little French girl whose nationality is plainly discernible in her drawing.

The fourth and last exercise is *decorative* work—designs of all kinds, in pencil and color, in carving and weaving, in bas-relief and sculptural ornament. This work, too, calls for a great amount of invention, and children will take great pride in it, as is seen as low down as in the Kindergarten, if they are given the proper incentive. In other words, there must be the stimulus of a genuine interest in the object of decoration. The work must not be aimless, but always to a certain purpose; that means we must give the children some special thing in which they have an interest, some surface, to decorate.

1 2 3 4 5



6 7 8 9 10

Figure 38. Clay Modeling



Figure 27. A Pond with Trees



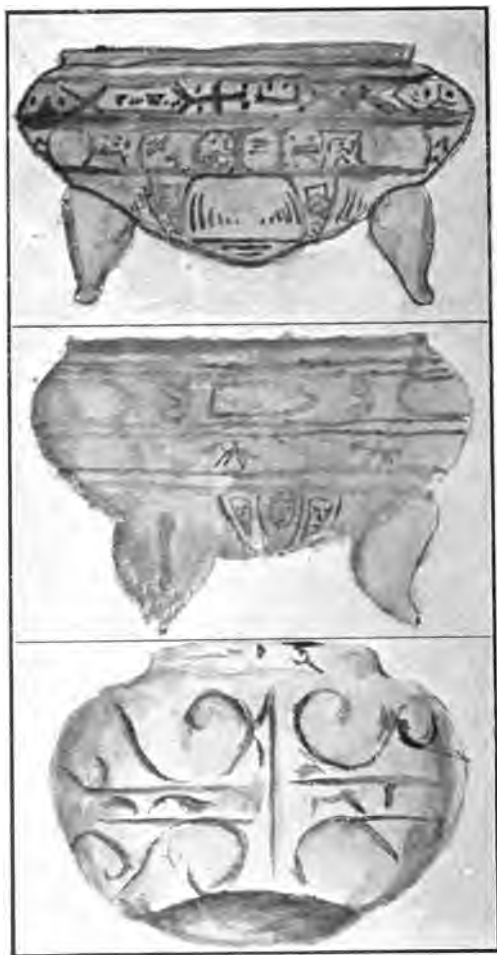
Figure 36. "Priam's Visit to the Tent of Achilles"



Figure 37. A Winter Scene



Figure 32. Clay Modeling



Figures 33, 34, 35. Colored Drawings of an Indian Vase



*Shoemaker and Carpenter
at Work*

*Five Minute Sketch of Author
of this Volume*

Figure 31, A and C



Figure 31b. Still Life

Suggestions as to a Course in Art Training

Abstract designs call forth very little enthusiasm. But let them plan a design, and execute it, by carving or painting, to beautify a vase, or a workbox, or a baseball bat; or design a cover for a book they have read, or for a series of essays they have themselves written; or urge them to look around for any objects of common use which, by decoration, they may transform into a thing of beauty: and the children will at once become interested and exhibit an ardor and zeal, and a fertility of invention which it is a genuine pleasure to behold. The decorative effect of the candlesticks (models 3 and 4 in *Fig. 38*) and inkwells (models 6-10 on same plate) is certainly striking. The fish design in *Fig. 32*, invented by a girl of fourteen, is also very interesting.

Much ornamental art consists of the repetition of simple figures. It has been shown* that this phenomenon is connected with a peculiar tendency of the mind to count and group objects automatically by resolving large numbers into small groups of equal or similar characteristics. This tendency has much to do with the sense of rhythm which,

*"Some Mental Automatism", by E. H. Lindley and G. E. Partridge, *Pedagogical Seminary* V, 1.

Some Fundamental Verities in Education

in turn, is closely in accord with the circulatory and respiratory rhythm. The idea of "symmetry enters largely into the products of animal activity, e. g., the symmetrical structures of ants and spiders, the circular nests of fish and birds." This biological condition is probably the source from which our love of symmetry springs, and indicates "the origin not only of all conventionalisms in art, but also of the impulse which led to an interest in geometrical science." I have quoted the results of these interesting investigations because they corroborate my previous contention that there are biological causes for many of the mental activities with which we are here dealing, and that we must appreciate children's work in the light of manifestations of growth.

As to the *form of execution*, drawing is evidently that form of artistic activity which, tho practiced earliest, owing to the easy accessibility of paper and pencil, presents the greatest difficulties to young children, as it requires the greatest degree of artistic abstraction—representing, as it does, the three-dimensional space on a two-dimensional surface; and it is apt to tempt children into scribbling, that is the making of aimless

Suggestions as to a Course in Art Training

lines. The experiments reported in this book seem to show that *modeling* offers the easiest and most natural beginning of art expression. It deals with three-dimensional masses, and allows of a more realistic representation. Clay permits energetic handling and is yet soft enough to offer the least possible resistance to the feeble fingers of the youngest pupil. It appeals to the sense of touch and produces tactile sensations of smoothness which have so much to do with the development of esthetic emotions. It strengthens the judgment of form, and calls forth that motor activity thru which the mind acquires so many of its most precious concepts. It is so easy to handle that even tender tots can make wonderful things, and yet it permits of the highest perfection and mastership.

Leaving out, in this connection, such occupations as *weaving* (in paper, ribbon, and thread), *carving*, *needle-work* and the like which connect art work proper with manual training, as these exercises have been referred to in the first part of this book, I would suggest as the next step, *paper cutting*. While here, the three-dimensional space is reduced to a two-dimensional

Some Fundamental Verities in Education.

symbol, it still deals with tangible objects which are much more realistic than the mere picture. Children will often play with paper dolls as gladly as they do with the creatures of sawdust and porcelain, and will dress them, and put them to bed with almost equal delight. And then, it deals with *outlines*, with the silhouettes of objects, with their shadow-pictures. Shadow-pictures arouse the children's intensest interest, as we all know; and it has been shown in more than one way that children are most concerned in outlines. Of course, drawing may also be in outline; but paper cutting, or tearing, has this advantage that it is more direct and prevents scribbling. It also strengthens the child's judgment as every cut of the scissors tells.

Last of all come *painting and drawing*—with brush and water colors, colored crayons, pencil and what not, at the discretion of the teacher who will adapt himself to the varying needs of the different ages and individuals. It is not intended to imply that there should be at first only modeling, then freehand cutting, and last drawing. Rather will the three forms of expression go hand in hand. But the work should be so directed as to produce in the child's mind a true con-

Suggestions as to a Course in Art Training

ception of the world around him, and to strengthen his power of self-expression. In particular, it may be said that in any *special series of exercises* the sequence should be first modeling, then cutting, then painting, and finally drawing. But do not tie the children down to minute representations, to a scale which requires great exactness and fine work. Grant them ample space, the blackboard, large sheets of paper, large crayons; encourage bold lines, bold strokes; the character and swing of the whole rather than a painstaking recording of details.

Alongside with exercises in expression, there should go a study of great models, of the masterpieces of art, of painting and sculpture. This should be done not so much for the purpose of searching into the details of their technique (tho it is well to study the master touch, and to learn from the manner in which great minds have expressed themselves) as to derive inspiration. *Art is a record of the development of our conception of the beautiful*—a record of the great thought development of the race. For in their art, the succeeding generations embodied their ideals. *The history of art is the history of ideals.*

Some Fundamental Verities in Education

Conclusion

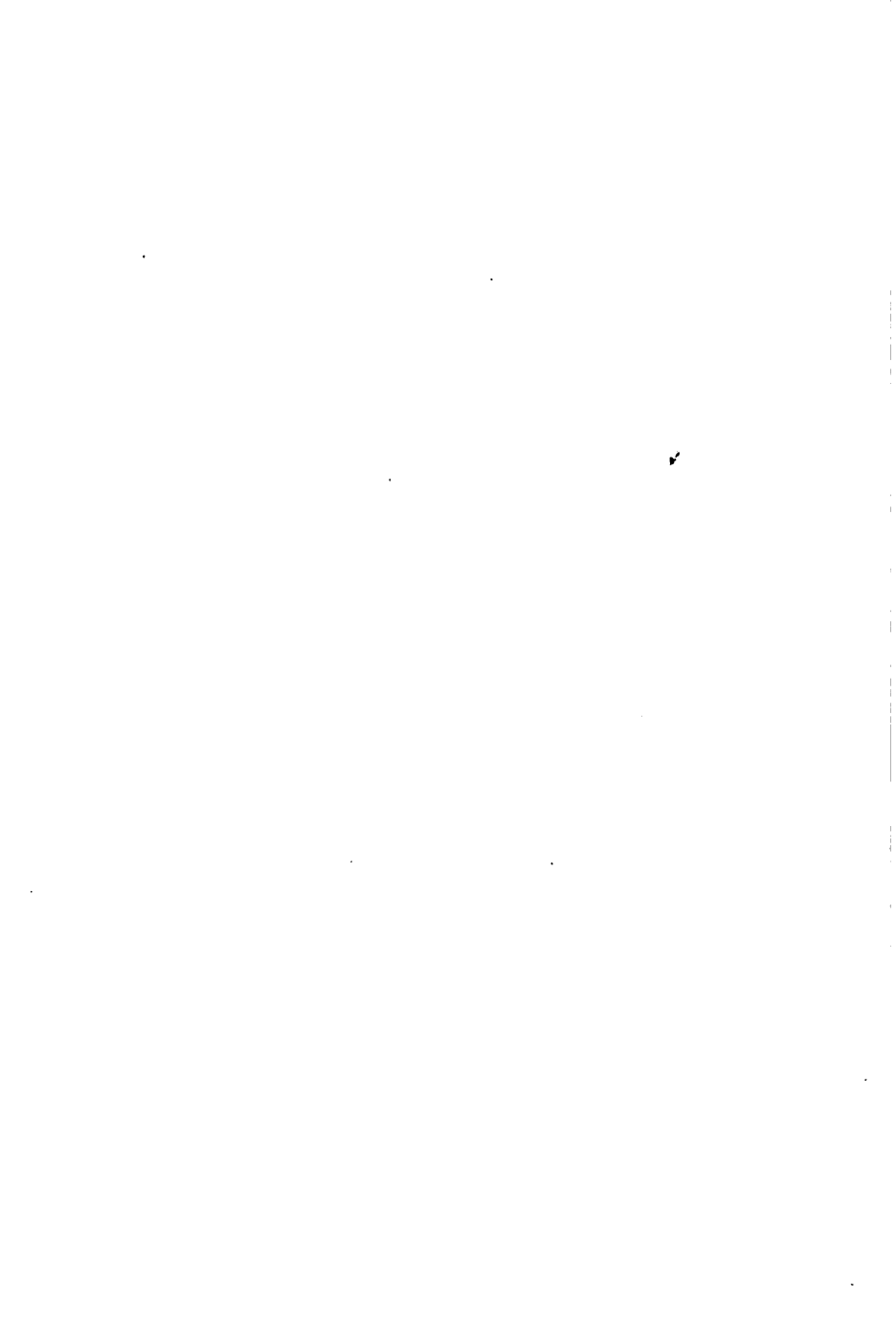
In closing, my plea is once more for freedom and individuality. It is not for so-called results, that is showy products, for which we must strive, but we must make this work an instrument to develop the child-soul in its integrity and fulness. The perfection of the *child* must be the aim, not a finished piece of work that will arouse the enthusiasm of an unpedagogical multitude. If we would once begin to understand that the real product of education cannot be exhibited and made a show of, but that it will reveal itself in the life and character of the child when he has reached maturity: we shall learn to apply the right measure to school instruction, and in particular to elementary art work. This must be so conducted that it may reveal the best and the noblest of which the child's soul is capable, that it may become a stimulus and inspiration for a genuine striving for the ideal. But unless the child is given latitude to be himself, to express himself, and unless his ideas and their expression are judged from a child's standpoint, however crude that may be; or if the child's natural instincts are repressed to

Some Fundamental Verities in Education

make way for artificial methods and conventional systems: art, as well as any other branch that deals with emotions and ideals, will become a demoralizing element, tempting the child into mere outward conformity, affectation and cant. Art, to be a moral influence, must also make for truth; it must lead forth from the deep recesses of our heart a revelation of our most individual feelings; it must be an expression of all that is dear to our mind, and sacred, and noble, and exalted. Art must serve to establish the right relation between our inner self and our outer self, between what we are and what we seem. The right kind of art work will awaken in our children that love of harmony and order, that enthusiasm for genuineness and sincerity, that respect for the rights and characters of others, as well as for their own true nature which struggles for existence and expression; in short, that spiritual attitude which alone will render their lives a revelation of goodness, a blessing to the world they live in, a factor in divine regeneration. The truth alone will make us free. Polonius' oft quoted words find a ready application to all forms of self-expression, but notably to that of manifestation thru art:

Some Fundamental Verities in Education

"To thine own self be true,
And it must follow as the night the day,
Thou canst not then be false to any man."



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